DEC 13 1917
UNIV. OF MICH. LIBRARY

Illinois Medical Journal

OFFICE OF PUBLICATION 3338 OGDEN AVENUE, CHICAGO

Vol. XXXII, No. 6 CHICAGO, DECEMBER, 1917 $2.00 a Year

CONTENTS

ORIGINAL ARTICLES

PAGE

Conservation of Maternal Nursing. *George Edwin Baxter, M. D., Chicago* 381

Electrical Treatment of Infantile Paralysis. *Emil H. Grubbe, M. D., Chicago* 384

Remarks on the Treatment of Cavernous and Plexiform Angioma. *Francis Reder, M. D., St. Louis, Mo.* 387

Review of the Recent Work on the Etiology of Pneumonia. *Willard W. Dicker, M. D., Chicago.* 393

The Removal of Steel Particles from the Interior of the Eye by the Magnet. *Frank Allport, M. D., Chicago* .. 395

PAGE

The Interrelation of the Diseases of the Eye, the Nose and Nasal Accessory Sinuses, with Report of Cases. *E. C. Spitze, M. D., East St. Louis* 399

The Management of Squint. *Robert Von der Heydt, M. D., Chicago* 404

Some Medical and Surgical Problems of Prophylaxis in Eclampsia. *W. H. Condit, M. D., Minneapolis, Minn.* 406

The Treatment of Hemorrhoids Under Local Anesthesia. *Charles J. Druteck, M. D., Chicago* 411

Liquid Petrolatum as an Antiseptic. *H. L. Jenkin, M. D., Millford, Ill.* 416

The Course of the Tuberculous Disease at Different Ages. *John Ritter, M. D., Chicago* 416

(Continued on page 88)

Entered as Second-Class Matter August 28, 1913, at the Post Office, Chicago, Illinois, under the Act of March 3, 1879.

Books by Chicago Men

Abt—The Baby's Food. $1.25 net.

American Illustrated Medical Dictionary. New (9th) Edition. $5.00 net.

Arey—Laboratory Histology. $1.00 net.

Bohm, Davidoff and Huber—Histology. Second Edition. $3.60 net.

Church and Peterson—Nervous and Mental Diseases. Eighth Edition. $5.00 net.

De Lee—Obstetrics. New (2nd) Edition. $8.00 net.

Fenger—Memorial Volumes. Per set, $15.00 net.

Grulee—Infant Feeding. New (3rd) Edition. $3.25 net.

Herrick—Introduction to Neurology. $1.75 net.

Herrick and Crosby—Laboratory Neurology. *Ready Soon.*

Hill—Histology and Organography. New (4th) Edition. $2.50 net.

Hill and Gerstley—Infant Feeding. $2.75 net.

Hornsby and Schmidt—The Modern Hospital. $7.00 net.

Jordan—General Bacteriology. New (5th) Edition. $3.25 net.

Prentiss and Arey—Embryology. New (2nd) Edition. $4.00 net.

Smithies and Ochsner—Cancer of the Stomach. $5.75 net.

Strouse and Perry—Food for the Sick. $1.50 net.

Surgical Clinics of Chicago. Per Clinic Year: $14.00 net.

Webster—Diseases of Women. $7.00 net.
—Obstetrics. $5.00 net.

Wells—Chemical Pathology. Second Edition. $3.25 net.

A VERY MERRY CHRISTMAS

W. B. SAUNDERS COMPANY **Philadelphia and London**

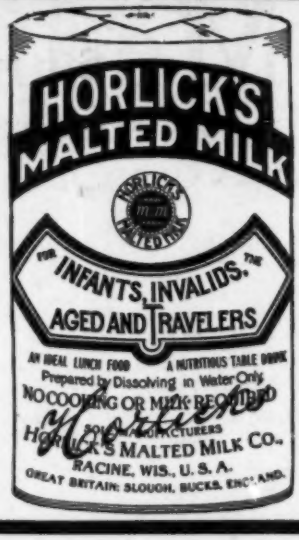
This Issue, 6,700 Copies

Horlick's

the Original Malted Milk

The *quality* that established "Horlick's," the Original Malted Milk, as a dependable INFANT FOOD over a third of a century ago is *maintained today*, so that it is used extensively by the profession who desire a well balanced food, complete in itself.

Besides being one of the most satisfactory infant-foods, "Horlick's" is of particular advantage as a supplementary nutrient for increasing the flow of milk of the nursing mother, and in assisting the convalescent to make a progressive gain in strength.


HORLICK'S
MALTED MILK
FOR INFANTS, INVALIDS, THE AGED AND TRAVELERS
AN IDEAL LUNCH FOOD
A NUTRITIOUS TABLE DRINK
Prepared by Dissolving in Water Only
NO COOKING OR MILK REQUIRED
HORLICK'S MALTED MILK CO.
RACINE, WIS., U. S. A.
GREAT BRITAIN: SLOUGH, BUCKS, ENG.

Horlick's Malted Milk Co., Racine, Wis.

Clinical Laboratory Analyses

The kind of clinical laboratory work that commands respect

Wassermann and other complement fixation tests - - - - - $5.00
Our technician is a pupil of Wassermann.

Lange Colloidal Gold test of Spinal fluid - - - - - - - $5.00
Our technician is a pupil of Lange.

Autogenous Vaccines. In single vials or ampules - - - - - - $5.00
Our technician trained under Michaelis of Berlin and Sir Almroth Wright of London

Tissue Diagnoses. Frozen section, paraffin or celloidin - - $5.00
Diagnosis by Dr. Maximilian Herzog

Know the Reputations and Training of Your Laboratory Technicians.

Accurate Analyses of All Secretions, Excretions and Body Fluids.

Mailing Containers on request.

Laboratory of Pathology and Bacteriology

Dr. Meyer D. Moledezky, Director

Eleventh (11th) Floor, Suite 1130 Marshall Field Annex Building
25 East Washington Street Phones Randolph 6552, 6553

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF

THE ILLINOIS STATE MEDICAL SOCIETY

VOL. XXXII CHICAGO, ILL., DECEMBER, 1917 NO. 6

Original Articles

CONSERVATION OF MATERNAL NURSING.*

GEORGE EDWIN BAXTER, M. D.,
CHICAGO, ILL.

The object of this paper is to review a most important subject and emphasize certain features which experience has shown are important in preserving breast food. There can be no doubt but that the study and care necessary to conserve mothers' milk has been neglected by the physicians. That the breast milk is the ideal and natural food for the infant admits of no opposition, or even discussion. The recognition of this fact is proven by the almost universal advice that the babe should nurse its mother. In conceding the universality of this opinion one must distinctly qualify its acceptance and application as being acted upon in a desultory fashion.

The doctor has by no means fulfilled his duty to his patient, when he discharges from his mind his responsibility toward the maternal nursing of the infant by the statement "that the baby must nurse the breast." It is important and necessary that this advice should be applied directly to the individual infant in hand. The study of the associated conditions and the detail of care must occupy a prominent place in the instructions given to the mother.

A further reason for the presentation of this subject lies in the high percentage of unnecessary weanings from the breast in the early weeks of infant life. The advice is given in my judgment many times not necessarily from the lack of knowledge, but from carlessness and indifference to the possibility of preserving the breast milk for the infant.

It is a familiar experience in practice to be frequently called by a young mother who is filled with fright, anxiety and ignorance, when suddenly she finds herself, after her obstetrical nurse has gone, the sole guardian of and responsible for the life of the helpless, crying infant. The mother telephones her physician; she is greatly alarmed. The physician is busy and is content to reassure her that the child has the colic, and orders a dose of castor oil. A repetition of this, or similar experiences, with an ever increasing anxiety, fatigue and loss of sleep on the part of the mother, and certain helplessness on the part of the physician, creates a vicious circle. To meet this condition is the ready and ever present advice of the friends and relatives that the breast milk is disagreeing with the child. The doctor is overwhelmed with all this evidence and is soon drawn in with the majority and the breast milk is lost for the babe.

Periods of Nursing.—Arbitrarily we may divide maternal nursing into three periods: First, the first two months of life; second, the third, fourth, fifth and sixth months; third, the seventh, eighth and ninth months. The first period demands the most careful consideration. If the breast milk can be maintained through this period, usually the infant will go through the second period with but little disturbance. The third period is important since it is common for many infants to cease thriving on breast milk alone, and during this period are to be found the beginning of many of the chronic nutritional disturbances.

A large percentage of infants after the sixth to the eighth month do not thrive properly when fed exclusively on breast milk. This percentage is greatest not only among the more highly organized members of society, but it also holds true among a large class of women whose nervous systems are not so highly susceptible. Chronic nutritional disturbances of a mild or severe character are commonly seen during this stage when the infant has received none other than breast milk.

*Read before the Chicago Medical Society Meeting, June, 1917.

It is, therefore, imperative that the breast feeding after the eighth or ninth month should be of secondary importance in developing the proper balance in the infant's nutrition.

Nursing During the First Period.—This is the most valuable period to the infant, even a few weeks of breast feeding if properly directed will furnish a good nutritional basis for either supplemental or substitute food in case sufficient breast milk is not to be obtained. The first period is likewise the most serious time, especially for the mother with her first infant. Other children are spared the trials, discomforts and tribulations that beset the early life of the elder child, because the history usually shows that the mother nursed all but the first infant.

Factors of Importance.—The laboratory analysis of breast milk has much less importance than formerly. The determination of its chemical composition is rarely needed in my experience. Occasionally it is advisable to have the milk examined, but it is of little consequence to the infant or the mother that the milk gives a perfect analysis if the baby is not thriving. Likewise it is of no importance if a slight variation in fats, carbohydrates or proteids is found, providing the baby is thriving.

The influence of environmental conditions is a factor of great importance and one too often neglected. A study of extraneous influences upon the production of mother's milk, reveals the necessity for the most careful attention to detail and of giving the most explicit directions for management.

To one who has given special study to this subject, it is known that the infant during the first period is a direct barometer of the mother's condition, especially as relates to her general state of health and her nervous and mental equilibrium.

The environmental factors which influence the quality and quanity, physical and chemical properties of the mother's milk are numerous. Most prominent among these are home conditions. This does not refer to position of affluence, but rather to those conditions which are directly responsible for domestic tranquility, in which the grandmother, the aunts, the sisters, friends, and lastly, the husband, may play no unimportant part. Any or all these may exert a tremendous influence upon an emotional or neurotic mother, susceptible as she is at this time, causing her to allow her anxiety to supersede her judgment. Mothers, usually, if left alone, display much better management than they do when influenced by women of large experience in raising a family. I am aware that these influences may be much greater than the influence of the doctor, but I plead for more strenous persistance on the part of the physician to gain control of such a situation for the preservation of good food for the new born infant. General regularity of the habits of the nursing mother, her exercises, and care of nipples should all receive careful attention.

Considerable difference of opinion has been expressed in recent years regarding the frequency of nursing. The habits of feeding the baby at regular two hour intervals, or at each time that it cried, has objections. The extremist who advocates a four hour nursing interval for all infants, likewise is open to criticism. In my judgment no infallible rule can be given for the frequency of breast feeding during the first period. I am sure that I have saved the breast food for many infants by demanding that feedings should be given at intervals of two hours for a limited period of time. The added stimulation to the breast by frequent nursing is most beneficial in establishing the flow of milk, and once that milk flow is established, then the infant thrives best by increasing the intervals to either three or four hours.

The length of time that an infant should feed at each nursing is best determined by the infant himself, provided he can be kept actively at his work until he has finished. Generally speaking, it is safe to say that the babe should obtain sufficient amount of food from a properly secreting breast, within twenty minutes and frequently in six to ten minutes. If he persists in nursing thirty or forty minutes, or even an hour, it is quite certain that he is not getting a sufficient amount of food. This is easily determined by weighing before and after feeding and by watching the weight curve.

Stools.—Especial attention must be directed to the comparative unimportance of examination of the stool during the first period of maternal nursing. Be cautious as to the serious significance which you attach to stools of breast fed infants which do not conform to the so-

called normal. The stools which are really important are: 1, the starvation stool which consists of dark green mucus, and always indicates that the baby is not getting food into its intestines; 2, that very scanty and infrequent stool; by infrequent we mean none for a period of a few days. This again occurs when the infant is getting insufficient food; 3, the real genuine diarrheal stool, thin, watery, occurring eight, twelve or more times in twenty-four hours, is of rare occurrence in the first period of maternal nursing. Under perfectly normal conditions one finds a stool occurring after each nursing, which may be loose and contain some small flocculent curds; may have some green color and mucus. This stool is not an indication for calomel or oil, but occurring in a contented happy child should be forgotten.

Vomiting may be a most important symptom during the first period. One must distinguish, however, between a genuine vomiting and a simple regurgitation of food from an overloaded stomach. In the early days of breast feeding the infant may have genuine vomiting of all food or water and yet no mechanical obstruction be present, due to inability of the infant to digest the first rich milk. A careful study and management will bridge over this trouble, and patience will be rewarded with a continued feeding of breast milk to the entire welfare of the infant.

It is of course important to recognize the occurrence of a true and persistent vomiting and search for the cause which may be and usually is not to be found in the breast milk, *per se*, but in either a mechanical obstruction or environmental influences of unfavorable character to the secreting source of the milk.

Supplement Feeding.—An important aid in preserving breast milk is found in the use of supplemental feedings. In using this method the breast milk is conserved for its full value even though that value is not sufficient for the infant's needs. The mother is instructed to nurse at the breast at each regular feeding, and a properly prepared cow's milk mixture is given from the bottle immediately after nursing. The method of supplemental feeding by alternate breast and bottle is not as successful as the mixed feeding at each period of nursing. If the breast is nursed only two or three times in twenty-four hours the tendency is for the secretion of milk to lessen or even cease.

Not only the nutritive value in the breast milk is saved for the infant but also that protective property which maternal milk gives the infant, and which we cannot measure by our physical and chemical standards. A properly regulated mixed feeding may be started in the first period and carried through the second or even the third period with the proper balance of nutrition obtaining, whereas with either breast milk alone or artificial feedings alone, the results could not be obtained with the same degree of contentment.

The diet of a nursing mother demands careful attention. She should have the food which her appetite naturally craves, but she should be instructed not to eat food which causes indigestion. The food taken should be simple, of good variety, tastily prepared and regulated in quantity to meet the requirements for proper secretion of milk. The flow of milk has been conserved from a direct standpoint in my experience preferably, by following the above rules, and additional food in the form of milk mixed with various cereal gruels. The importance of this latter is to be found in the regularity of giving such mixture. My rule is to give a glassful about fifteen to thirty minutes just preceding the nursing time.

During the second period of maternal nursing the infant will usually thrive properly if the breast food has been sufficient during the first period. It is wise to have the mother report about once a month that you may keep watch of the progress.

In the third period one should be watchful for signs of insufficient food and evidence of lack of balance in nutrition. The infant may be perfectly well and happy but the mother notices it has reached a stationary weight. This may continue for weeks. Again the child which had previously slept all night now awakens several times for feedings. A happy baby has become a crying, fussy infant, evidently not satisfied with the nursings. The babe may persist in staying at the breast when formerly it was contented with nursing eight to fifteen or twenty minutes and gained; now it will nurse thirty to sixty minutes and not be satisfied. Furthermore, even in the presence of satisfactory con-

ditions of contentment, and gains in weight there may develop beginning signs of chronic nutritional disturbances such as rickets, tetany, etc. Just as it is important to develop an exclusive breast food during the first period of maternal nursing, so it is necessary that supplemental feedings should be started usually about the fifth or sixth month.

RECAPITULATION.

First. Conservation of the breast food in the first two months practically insures a breast food for the infant in the second and third periods.

Second. The first is the most serious period for the mother and babe.

Third. Proper management of environmental conditions should receive most patient and careful consideration.

Fourth. The relative unimportance of the laboratory examination of breast milk.

Fifth. The relative unimportance of the appearance of the stool.

Sixth. The necessity for the physician to recognize that the conservation of the mother's milk, can only be accomplished by his careful, earnest, and conscientious attention to details.

Seventh. The importance of properly regulated mixed feedings as a means of conserving maternal milk.

4601 Broadway.

ELECTRICAL TREATMENT OF INFANTILE PARALYSIS.

EMIL H. GRUBBE, B. S., M. D.,
CHICAGO.

The principal objects of this paper are: First, to call attention to the fact that although modern electrical treatment of infantile paralysis is of the greatest value it is not appreciated by the majority of medical practitioners. Second, to show that when we use electrical treatment in this disease we exhibit sense, common sense at that. Third, to insist that we make more extensive use of this treatment in order that the many sufferers may be helped before it is too late.

Each epidemic of infantile paralysis calls attention anew to the serious nature of the after effects, the paralysis, of this disease. It may sound blasphemous but it is nevertheless true that paralysis is mainly due to improper treatment during the convalescent stage of the disease The convalescent stage of infantile paralysis lasts a long time, usually two years, hence physicians who have charge of these cases may have much to answer for.

What is the object of all treatment for infantile paralysis? This may be summed up in one short sentence, viz.: the prevention of deformity. The problem then is to find remedies which will keep function in the muscles and thus prevent deformity. What remedies have we to offer? Comparatively few remedies are available for this purpose. Practically there are only three: massage, passive motion and electricity. Of these the last mentioned is the most useful.

As physicians you know that paralysis means inability of the will of the patient to contract muscles. You also know that electric currents may be used to contract muscles. This power of electric currents is capable of exercising muscles with or without the will of the patient. It takes no stretch of the imagination to conclude that an agent with such distinct properties should appeal to us as offering therapeutic possibilities in the treatment of infantile paralysis.

The principal advantage of electricity over massage and passive motion is due to the fact that the former promotes the passage of nerve impulses as well as retards muscle atrophy, whereas the latter two remedies have no stimulating effect upon the nerves. In addition to the mechanical contractile effects upon the muscles electricity also possesses chemical properties which act as a powerful stimulant to the nutrition of all tissues in the affected region. Finally electrical treatment when compared to other treatments is precise, not haphazard. With electricity we can pick out and treat individual muscles. On the other hand with massage or passive motion we treat the normal as well as the sick muscles; we treat groups rather than single muscles; we treat arms and legs rather than the particular parts which control these comparatively large areas.

Electrical treatment of infantile paralysis must be considered from two distinct standpoints in order that proper results may be obtained and also in order that the remedy may receive proper credit for the good it can do. First, electricity

can be used to prevent primary muscle atrophy which is due to lack of motion, and, second, it can be used to prevent progressive muscle atrophy and the deformity which would result therefrom. What are the gross pathologic conditions involved in the paralysis of this disease? To begin with there is deprivation of voluntary contractility in the muscle—a purely functional trouble; this is followed by atrophy of the muscle—an anatomical trouble. The patient cannot contract his muscle, therefore we must help him to do so.

Electricity is the only agent known which is capable of producing muscle contractions similar to those voluntarily produced by the patient. In other words, you will hunt a long time before you will find another remedy capable of doing what electricity will do for these paralyzed muscles. Furthermore, what electricity does to these muscles is all that needs to be done; all other treatment should be considered secondary and usually does more harm than good.

This may appear to you as a bold statement, yet, if you will study the subject thoroughly you will find it to be true.

Electrical treatment is not to be used during the acute stage of the disease; it is called for only when there is positive evidence of atrophy or paralysis. Strictly speaking electricity is not a remedy at all for infantile paralysis; it is rather a remedy to combat and limit the sequelae of this disease.

As long as tenderness is present in any muscle the patient should rest, if necessary, with the aid of well fitted supports or splints. Usually electrical treatment can begin at the end of the second week of the disease. Atrophy is not an early symptom. It usually shows a week or more after the disease has started and when it begins it proceeds slowly. But we must never wait until there is decided atrophy before beginning electrical treatment. By waiting too long we give time for the development of atrophy often so profound that it may not be checked in time to prevent deformity. I am convinced that by proper electrical treatment, begun in time, atrophy can be almost entirely prevented.

In a given case to absolutely settle the question of whether there is or is not a state of muscular weakness we make the electrical reaction test for degeneration. This gives both qualitative and quantitative information pertaining to each muscle or group of muscles tested. This test can be made without harm to the patient and should, therefore, be used more frequently than it has been in the past. Only by this means can we accurately locate the limits of the paralysis. I believe that this is so important that I am willing to state that no case has been properly treated unless the reaction test for degeneration has been made. If electricity did nothing else for infantile paralysis but locate accurately the muscles or groups of muscles which need treating it should be welcomed, for it will have a very big field of usefulness—a field in which it has no competitors.

Now, the mere giving of electricity is not all sufficient in treating this disease. Electrical treatments must be properly given or they will do more harm than good. Fatigue, that destroyer of what muscle function is left, can be produced by too much or too long applications, therefore in order that these treatments may be worth while they should be given by someone well versed in both anatomy and electricity.

The methods for applying electric currents in infantile paralysis are numerous and usually quite unscientific. When we realize that this is primarily a disease of the nervous system we must conclude that the nerves need treatment as well as the parts controlled by them, i. e. the muscles. The common way for applying electricity which consists in trying to locate the points of origin and insertion of a muscle by means of the electrodes is wrong because the nerve controlling the muscle is not considered in the treatment. The nerve needs treatment more than does the muscle and should receive our serious attention.

The scientific way to give electricity in infantile paralysis is to apply the electrodes to the nerves controlling the affected muscles. This can be done by locating the motor point on the muscle with one electrode and allowing the electricity to enter at that place. The other electrode, known as the indifferent one, should be placed at the spine as near the exit of the affected nerve as is possible. When you recall that this disease involves that area of the spinal cord which controls the motor nerves—the anterior horn, then you will readily see the importance of exciting muscle action through the motor points of the

nerve which are located on the surface of the affected muscles. This, in my opinion, is the only rational way for giving electricity.

Since there are several varieties of electricity what kinds should be used in the treatment of this form of paralysis? Personally I consider only galvanic and static currents capable of meeting the requirements for a scientific remedy and therefore I use these two currents to the exclusion of the others. In a given case the choice will depend largely upon what the reaction test for degeneration has shown. If the test shows fair excitability of the muscles under galvanic current then this is the current to use in treating the case. On the other hand when the lesion is by test shown to be a profound one, then the static current is of more value and so would be preferred. In adults I choose the static current, no matter what the degree of paralysis. Its application is more convenient for both patient and operator.

The technique for giving galvanic electricity is as follows: The negative electrode consists of a piece of sheet tin or copper about 3x8 inches or larger in size. This is covered with a towel which has been moistened with warm water and placed in the region of the lesion at the spine. To keep it in place a bandage may be used or the patient is allowed to lie upon it. The positive electrode consists of a metal disk about one-half inch in diameter. This is covered with well wetted cotton, attached to an insulated handle which is held in the operator's hand and placed, by him, to the various motor points on the paralyzed muscles. The current must be interrupted by means of a rheotome so as to make it possible to produce the rhythmic contractions required in the various muscles. This rhythm is very important. Short muscles should be contracted more rapidly than long muscles. As a rule the muscles of the hand and foot need to be contracted from 30 to 40 times per minute; those of the arm and leg from 10 to 20 times; and those of the abdomen and back from 20 to 30 times. In order to avoid tiring the muscles the period of activity should be followed by an equal period of rest. To start with, each motor point receives the current for about one-half minute's time; as the treatments are continued and improvement is shown, each contact may be allowed to remain for a period of from 1 to 2 minutes. Every motor point controlling a paralyzed muscle must receive individual treatment, i. e., the electrode must touch each motor point separately.

The question of quantity of current to use depends upon the individual muscle under treatment. The smallest amount which will produce muscle contraction is all that is allowable. In order that the contractions may be accurately observed a good light is very desirable. From 2 to 5 milliamperes will usually be found sufficient quantity to produce visible contractions.

In giving static electricity the following technique is used: Leyden jars are attached to the machine. The prime conductors touch each other. One pole of the generator is grounded and the other, attached to a small metal ball which is held in the operator's hand by means of a well insulated handle, is placed upon the various motor points. The rhythm of contractions is dependent upon the speed at which the machine runs and is the same for the different muscles as that given previously under galvanic treatment. To regulate the amount of current the prime conductors are separated—the larger the air gap between them the greater is the volume of current available for excitation of the muscle. A one-half to one inch spark gap between the prime conductors is suitable for the muscles of the hand or foot; 2 to 3 inch spark gap for the muscles of the arm or leg; 3 to 4 inch spark gap for the muscles of the abdomen or back. With either static or galvanic currents the treatments are given daily. When improvement appears the interval between applications may be lengthened.

It is a mistake to suppose that by giving a muscle a large amount of electricity we will do a proportionate amount of good. A little may be enough, too much is dangerous. To be on the safe side we should use just enough current to produce contractions, but no more. If the electricity be applied for too long a period, or if too strong currents be used fatigue of both nerves and muscles will result and our object will not have been attained. Only from long experience can the operator tell when the treatment produces muscle exhaustion. Overworking a fatigued muscle is dangerous, for it may lose its recuperative power completely and also permanently. In this connection it is important to remember that the muscles which are antagonistic to the paralyzed ones are not to be excited

during electrical treatment. An ideal treatment is obtained when the weak muscles are not overexercised nor the strong or well muscles excited.

Naturally, in children the difficulties of applying electricity are great and one must overcome the little patients' fear by patience. Too much should not be attempted at the first sitting and only weak currents should be used until the patient acquires confidence.

When you understand how complicated the electrical treatment of infantile paralysis is you will readily see how impossible it is to get ideal results when inexperienced physicians or the laity make these applications.

The time during which benefits may be expected from electrical treatment is unlimited. I wish to emphasize that even in old, long standing cases, persistent, scientific application of the proper electric current will bring back considerable control and strength in the paralyzed parts. I have been able to produce decidedly beneficial results in cases where the paralysis had been of over ten years standing. This will appear reasonable when you recall that every muscle is connected with more than one nerve center, and, although one particular center may be completely out of order, others may be only partially without function. Remember that regeneration of nerve tissue is natural and needs only slight but proper assistance in order that permanent beneficial results may be brought about. Therefore, it may be said that it is never too late to begin electrical treatment in any case of paralysis. Of course in these old cases improvement should be expected only after many months continuous treatment, but even so, if then we obtain fair control of the muscles of a seemingly dead arm or leg we certainly have won back a precious function. So the usual hopeless view of the patient or those in charge should not be encouraged.

In conclusion, do not understand me to claim that electricity is a magic cure for infantile paralysis. It is not. It is not offered as a quick method for restoring withered muscles, but its early, patient, persistent (not spasmodic) use will bring rewards not obtainable by other means. Electricity is the only logical and natural remedy available at the present time. There is no substitute for it, consequently it should be used in the treatment of every case of infantile paralysis.

I predict that the electrical treatment of this disease will be, just like was the x-ray in therapeutics, eventually appreciated. Yes, eventually, but why waste two decades of time as was done in the case of the x-ray? Eventually, why not now?

130 N. State Street.

REMARKS ON THE TREATMENT OF CAVERNOUS AND PLEXIFORM ANGIOMA.*

FRANCIS REDER, M. D., F. A. C. S.,
ST. LOUIS, MO.

An angioma is a vascular tumor, non-malignant in character. On an anatomical basis angiomata can be classified as venous, which are rather frequently observed; then arterial, or plexiform angioma, otherwise known as a circoid aneurism, the "angioma arteriale racemosum" of Virchow, a vascular neoplasm rarely observed, and, lastly, the capillary form, the so-called "port-wine stain" or "mother's mark," which is quite common.

The theory that these neoplasms are caused by a dilatation of the capillaries, the walls of which have become absorbed, resulting in the formation of spores, has been favorably received. Of the cavernous angioma it can be said that it is a blood-filled cavity, non-pulsating, of variable size, with a thin covering of skin usually bluish in color.

The walls of these spaces possess an endothelial lining similar to that of veins. Numerous tortuous vessels supply the blood which fills these cavities and circulates with varying degrees of rapidity. The arteries open directly into the cavities.

The connective tissue enmeshing the vessels of an angioma is sometimes scanty and sometimes plentiful, thus causing irregularities about the vascular tumor that often give it a lobulated appearance.

Venous angiomata may be diffuse or form a distinctly circumscribed tumor. A circumscribed cavernous angioma possesses its distinct efferent artery and afferent veins and does not communicate with the neighboring capillaries, i. e., there exists no anastomosis with the capillaries in the surrounding tissue. The angioma shows a circulation wholly within itself, there being only a

*Address delivered before the Chicago Medical Society, Oct. 17, 1917, with lantern slide demonstration.

connection with the neighboring arteries and veins.

Their growth is slow. They increase, however, progressively in size with the growth of the patient, viz., a babe which at three months shows an angioma upon its lip that has the appearance of a flea-bite, will exhibit the same lesion the size of a hazelnut nine months later.

These vascular neoplasms are congenital in their origin. They are benignant in character, and although their histological formation closely resembles certain types of malignancy, yet clinically angiomata are considered non-malignant.

One of the principal characteristics of a hemangioma is that the entire tumor can be caused to disappear upon pressure, with a prompt return to its original size as soon as the pressure is removed.

Another characteristic is the prompt response in reflecting the temperament of its possessor, excitable influences causing the tumor to swell, become tense and more deeply discolored. This is accomplished through elastic fibres, closely resembling the normal erectile tissues of the body, which are contained in the connective tissue stroma.

From statistics it must be inferred that the face is the favorable locality for an angioma, two-thirds of these growths being located there.

The brow and the cheek seem to be selective regions. Next in frequency come the lips, the nose, the ears, and the eyelids. Strange as it may appear, the feminine sex is more prone to this affection than the male, two-thirds of all cases occurring in females.

Cavernous angiomata may also occur in the orbit, muscle, liver, spleen, kidneys, and the alimentary tract.

These vascular tumors have also been found in bone, the "myelogenous angioma" of Virchow, an extremely rare condition. Clinically the resemblance of a myelogenous angioma to an osteosarcoma is very great, making an intravitam diagnosis almost impossible.

Inasmuch as there is no pain in connection with a cavernous angioma, excepting when the tumor is so located as to cause pressure upon a nerve, the discomfort experienced must be ascribed to its size and, of course, its location. For instance, a vascular tumor situated upon the upper eyelid can become very annoying on account of visual interference. Again, an angioma of the cheek may involve the buccal tissue to such an extent as to make mastication difficult and even dangerous. This was exemplified in one of my cases where the patient accidentally bit the inner side of her cheek, causing an alarming hemorrhage.

Now let us consider briefly the plexiform angioma. This is usually a distinctly outlined tumor occurring in definite arterial regions. According to Fischer, 12 per cent. are of traumatic origin, the remaining 88 per cent. being derived from simple congenital angioma.

The tumor is composed of arteries and veins, the tortuous vessels giving this tumor mass a most characteristic appearance.

A favored site is upon the forehead, scalp and face. It is not infrequent, however, to find the hand, fingers and forearm affected.

In its clinical characteristics a plexiform angioma differs markedly from the cavernous type. The former usually forms a flattened tumor, gradually spreading into the surrounding tissues. The skin covering the tumor is very thin, usually more of a reddish than a bluish color, and is locally adherent. Pressure upon the mass will not cause it to be completely evacuated, as is the case in a cavernous angioma. This must be attributed to the large number of anastomoses.

Another characteristic phenomena found in the plexiform angioma and not present in the cavernous variety is the well-marked pulsation and bruit. For instance, the hand flatly applied to a plexiform angioma will distinctly perceive the pulsation and bruit in the tumor. Such an angioma located on the scalp or forehead will often cause a partial destruction of the underlying bone by attrition. This defect can be readily discovered by making gentle, but firm, pressure upon the thinned-out skin of the tumor, at the same time sweeping the finger over the affected area.

A plexiform angioma is not free from clinical symptoms, it usually causes dizziness, vertigo and a dull pain in the head. Such disturbances are not associated with a canvernous angioma.

The capillary forms of angioma have very little clinical significance, and exclusive of their unsightly appearance, cause no discomfort. It is not often that the possessor of a port-wine stain seeks advice as to the possibility of having

it removed. Even so, should the angioma involve a large area, which they not infrequently do, nothing of an encouraging nature as to its total or even partial removal could be promised.

An interesting fact in connection with capillary angioma is that their distribution often corresponds to the area of distribution of the three branches of the fifth cranial nerve, viz., angioma of the frontal germinal area and angioma of the superior and inferior maxillary areas. Bärensprung was the first to call attention to this. Cushing and others later confirmed his observations. Simon entertained a similar theory. He became impressed with the idea that nutritive disturbances in the region of the trigeminus were causal in producing such a condition.

Virchow advanced a theory that angiomata find their origin in the embryonic relations when slight irritative conditions about the margins and the circumference of the fetal clefts, which are always copiously supplied with blood vessels, may cause an abnormal development about these parts, with the possibility of a nevus formation. Such a condition may remain latent for a time and later manifest itself as a cavernous angioma. Virchow has applied to them the name of "angioma fissuraux."

According to Ribbert, the genesis of angiomata rests with two questions, viz.: Is the tumor a simple dilatation of the vessels in a circumscribed area, or is the tumor the result of a new growth?

To this may be added Stangl's argument as to whether or not these vascular tumors are of epithelial or connective tissue extraction.

Ribbert advocates the view that they are the result of a new growth.

From the exhaustive researches that this interesting vascular lesion has been subjected to, the inference must be made that the genesis of angiomata is not clearly understood.

A caverous or plexiform angioma, especially those of larger size, is one of the most difficult lesions with which the surgeon has to contend. In fact, some of these lesions are looked upon as inoperable and have been abandoned to an ever-increasing deformity and discomfort.

The most radical intervention for the "cure" of an angioma is excision. However, before having recourse to this measure, it is well to consider several salient points. One, a point of much import, is the size and location of the angioma, and the risk to life from hemorrhage. Another point, and one that commands recognition, especially when the angioma is located on the face, is the liability to deformity from mutilation and cicatrization.

These two points can be fused into one consideration for the surgeon who attempts to "cure" an angioma by excision, viz., that this radical measure is only permissible when the vascular tumor is of limited extent, well-circumscribed and situated in parts which can be sacrificed without the danger of great hemorrhage or the loss of important structures.

In an angioma of the face the effect of a mutilating or disfiguring operation must be seriously considered, especially in the female sex.

That many of these tumors are inoperable, i. e., not amenable to extirpation, has been demonstrated repeatedly by an attempted operative measure which had to be abandoned.

Other surgical measures, such as peripheral ligation, ligature of the afferent arteries, and tissue strangulation by the buried ligature have been considered when an extirpation seemed too hazardous. However, the results have at best been only palliative.

The severity of surgical intervention in dealing with an angioma caused other methods to be promulgated. Efforts were made to destroy the growth with all its constituent elements by the interstial action of irritating caustics or other agents applied externally or introduced into the afflicted tissues. Some of these methods have been used by me, but have proven disappointing.

For instance, the injection of alcohol (Schwalbe) and ferric sesquichloride are very prone to cause suppuration, and are not to be recommended. The injection of hydrogen peroxide (Mosetig-Moorhof) is a dangerous agent to use. Its introduction may be followed by a fatal gas embolism in the lungs. Payr's method, consisting of the introduction into the tumor of darts or rods of magnesium, a procedure that does not involve the danger of thrombosis or embolism, is not familiar to me, neither have I had any experience with radium.

The injection of water at the boiling point as recommended by Dr. John A. Wyeth has given me the most satisfactory results. The method must be looked upon as one of the advances in

the treatment of vascular tumors. Of 96 cases subjected to this method I have had no failures to record. The results were certain; the procedure was free from any accident. There are two cases, however, of which I wish to briefly speak.

Case 1. A child of sixteen months, with an angioma on the lower lip to the left of the midline, in size as large as a filbert. Two injections were given in the course of six weeks. The tumor was reduced to slightly less than half its size. It was then quite hard and its color, which before the injection was purple, was that of the normal lip.

The mother became dissatisfied that the tumor had not entirely disappeared with this treatment. At the advice of her friends, she saw a physician who removed it by excision. The removal was a success, and were it not for the scar on the lip the result would have been ideal.

I was informed by the physician that the removal was attended with but little bleeding. This must be explained on the assumption that the blood, coagulated by the boiling water, had become well organized. The mouths of the vessels opening into the vascular tumor had been well sealed. It was noticed during the second injection that the boiling water did not enter the vascular growth so easily as during the first. More piston pressure was necessary and the difficulty was plainly apparent. This was noticeable in every angioma of the lip that required subsequent boiling water injection.

The structure of the lip is peculiar in its makeup, and it is advisable to use extra precautions while introducing the boiling water. It is far better to subject the tumor to a subsequent injection, rather than have an overdistention during the first injection that may be the cause of a slough. The greatest sucess in a lip angioma, however, can be obtained by introducing the proper quantity of boiling water at the first injection. Otherwise, conditions may arise, as those just cited, which may invite excision.

It is gratifying, however, to know that a lip angioma which had not been entirely obliterated by the injection of boiling water can be excised with very little loss of blood.

Case 2. The other case was that of a young man who had an angioma midway on the right margin of his tongue. The growth was as large as a pecan nut and deep purple. About one-half ounce of boiling water was introduced into it. Within six hours the edema had involved the epiglottis to such an extent that breathing was seriously embarrassed. It was necessary to perform a laryngotomy. In thirty-six hours the edema had subsided and breathing again became normal. The angioma disappeared entirely in eight weeks.

In this case too much boiling water had been injected at once. It would have been safer to have given a lesser amount, repeating the injection in three or four weeks, if necessary.

The question, whether or not a cavernous or a plexiform angioma is a lesion that endangers life must be answered in a guarded manner. These vascular tumors possess an element of danger in proportion to their size and location. When there is non-interference, their growth may eventually produce a secondary lesion by spreading indefinitely, which may cause death. When there is operative intervention, i. e., excision, the great danger is hemorrhage.

The injection of boiling water is not entirely free from danger. However, of all the procedures it is unquestionably the safest. The danger of an embolism must be reckoned with and in all injections peripheral compression while the boiling water is being introduced into the tumor must be made.

There is always a possibility that boiling water injected into a plexiform (circoid aneurism), located upon the head, might be productive of a meningeal trouble. Furthermore, it may be readily assumed how a slough can result from boiling water when injected into a cavity filled with blood. It is not a simple matter to judge a boiling-water injection.

Before speaking of the technique of the boiling-water injection I wish to say something about a type of nevus which is elevated above the skin, and has been of interest to me. It is not infrequent that a nevus complicates an angioma. The treatment of a nevus has proven more or less unsatisfactory to me, no matter what method I employed. The Paquelin with round point has given the best results, yet it was not satisfactory because recurrences were numerous, requiring repeated applications of the cautery. This procedure usually resulted in a well-defined scar, which was very undesirable.

By using the boiling water in conjunction with the cautery, I found that usually with one application of the cautery a satisfactory obliteration of the nevus could be accomplished. This is to be explained on the ground that the nevus is fed by deeper lying vessels, even in the absence of an angioma. The injection of boiling water introduced underneath the skin in the connective tissue in the immediate vicinity of the nevus will obliterate these vessels, thus depriving the nevus of further nourishment. The cautery, with the aid of this starvation, will usually prove successful with one application.

In making the injection of boiling water

into an angioma certain conveniences will expedite this measure. A suitable syringe is essential. I have found an all-glass syringe with a good shoulder, a large ring on the piston, and an asbestos plunger, to have answered the purpose better than any of the many I have tried.

A syringe with an all-glass plunger has its drawbacks, as the steam generated within the barrel will find its way between it and the glass plunger, thus inhibiting the free and easy movement of the piston, so essential to this procedure.

The slip needle (small caliber, No. 20) is the preferable one. With it no time is being lost in the transference of the boiling water. It should always be borne in mind that the water must be injected at a boiling temperature and time is an important factor. It can be stated that those cases of angioma subjected to the boiling-water treatment, which did not respond properly, did not receive the "water" hot enough.

To protect the hands, at the same time making it possible to handle the boiling water, a pair of easy-fitting chamoisette gloves of good thickness have served me well. That portion of the glove intended for the little finger is cut off, so that the degree of heat in the tissues can be judged by occasional contact with the exposed little finger.

The arrangement in the operating room should be such that the surgeon stands between the vessel containing the boiling water (the water being kept constantly at the boiling point over a flame), and the patient, at a distance that will not necessitate a step on the part of the surgeon for the transference of the boiling water into the tumor mass.

The parts not involved should be protected with moist cloths, lest a scalding of these tissues might result from the hot water in the syringe being forced out at the needle junction by the generated steam.

The introduction of the needle and the force applied in injecting the hot water is of much importance. Inasmuch as the tissues of the new growth do not offer the resistance of normal skin, the hot water injected without great care may cause these tissues to break down. Injections made directly into the soft vascular mass are invariably followed by a necrosis.

For this reason it is well to make the initial injections by introducing the needle through the sound skin about one-sixteenth or one-eighth-inch from the edge of the angioma, well into the base of the vascular tumor, thus assuring coagulation of the deeper parent vessels. This is also a wise precaution against the dangers of embolism.

If the arteries leading into the tumor can be demonstrated, it is well to enter the needle along their course and inject a sufficient amount of boiling water to cause coagulation in these vessels.

Judgment should be exercised in introducing the needle to prevent the point from resting too near the opposite wall of the tumor. To properly estimate this procedure it is well to first introduce the needle without the syringe, and pushing it through the mass till it can be felt on the opposite side, then withdraw to the extent of a half an inch. This will give a reasonable assurance that the boiling water can be injected into the tumor without the likelihood of getting a slough. When the skin begins to show signs of becoming blanched and turns greyish in color, the injection into that area is to be discontinued. Hyperdistention must be carefully guarded against. The amount of hot water necessary to cause this bleaching rests wholly with the amount of tissue under treatment. After coagulation of this particular area has been satisfactorily accomplished, the point of the needle is made to penetrate into another area and the hot water injected.

In this manner the needle is introduced into the tumor in different places, and at various angles, till the whole mass gives evidence of coagulation.

The quantity of hot water which may be injected at one sitting can amount to two or four ounces in a tumor the size of a hen's egg, the time consumed in making the injection being about three minutes.

However, if the new growth is of unusual size, it would be advisable to inject only a portion of the tumor at one time, making a subsequent injection two or three weeks later.

It is interesting to observe the characteristics presented by an angioma subjected to the hot water treatment. The independence of the blood spaces from the blood vessels of the surrounding tissue can be demonstrated by the fact that the neighboring tissue is not affected, i. e., none of

the hot water finds its way into the adjacent structures while the injection is being made. However, shortly after the injection an edema of the immediate parts begins to manifest itself. This edema may be very extensive according to the amount of hot water injected. Frequently, when the lesion is on the face, the swelling may become so extensive as to close the eyes.

Although the condition looks alarming, there is little ground for actual fear, except when an injection is made for an angioma on the tongue. The patient suffers no pain, the condition is an afebrile one, and the edema usually subsides within the first week.

It is a wise precaution to apply ice or cold compresses to the tumor and surrounding tissues immediately after the injection for the first four to six hours, thereby lessening the severity of the edema.

At the end of the first week the tumor, but slightly diminished, has almost fully lost its pathological color and the tissues are beginning to assume a normal appearance.

To the touch the mass is hard. If it remains hard, the degenerative process is active and no further injection will be necessary. Should the tumor, however, begin to show evidence of softening with visible formation of new blood supply, an immediate injection is indicated.

The course of an angioma successfully injected is one of gradual diminution, the greatest progress being made from the second to the third week. A tumor the size of a hen's egg will usually require six to eight weeks for its disappearance. If the injection has been a fortunate one, i. e., free from any accident, such as cicatrization following sloughing, the site that once harbored the angioma will appear healthy and quite normal.

It is advisable that a general anesthetic be administered. The assurance of greater accuracy in administering the injection is thereby given. Sometimes, however, a general anesthetic may prove harmful, as has been the case in a circoid aneurism, when the anesthetic had to be discontinued for fear of bursting the tumor. I have repeatedly given the injection without an anesthetic and was astonished that the pain was not more severe.

A Case of Plexiform Angioma (Circoid Aneurism).—J. W., aged 43 years, a carpenter, struck the frontal portion of his head against a joist six years ago. Two years later he noticed a swelling in his forehead which gradually became larger, spreading beyond the hair margin onto the scalp. During the last six months he suffered much with dizziness and noises in his head.

Examination revealed a tumor mass involving the frontal region back to the coronal suture. Laterally the swelling extended to the temporal ridge. The tumor mass was evenly distributed. A hand placed flat upon the forehead would give a good idea of its size.

The tumor was bluish in color and the undulations of its surface gave it a convoluted appearance. All vessels leading to it were tortuous and filled to such an extent as to make them appear abnormally large. Distinct pulsations in the vascular tumor were visible and a marked aneurismal bruit and fremitus were present.

There was considerable destruction by attrition of the outer table of the skull.

On August 10, 1917, under a general anesthetic, this tumor mass was injected with six ounces of boiling water. As soon as the water was introduced into the cavity of the tumor, pulsation ceased. The doughy feeling of the mass gave evidence of thorough coagulation of the blood.

An edema began to develop immediately. In two days it had reached its height. It involved the upper half of the face, closing both eyes. After the third day, the edema subsided rapidly and the patient was able to leave the hospital on the fifth day.

Six weeks later all evidence of the circoid aneurism had disappeared. There was only a slight thickening discernible at its former site and that was undoubtedly due to an infiltrated periosteum. The dizziness and noises in the head had disappeared.

A Case of Cavernous Angioma.—Miss G., aged 33 years. Left upper eyelid harbors an angioma as large as a hen's egg. A picture of the patient taken when two years old shows the left eye closed by a tumor mass in the upper eyelid. The sight in the left eye, though weak, is normal, the tumor, however, robbing the patient of its usefulness.

At the age of 15 years, an operation, by a skillful surgeon, was performed. The operative measure consisted in the ligation of vessels leading to the angioma. There was a slight improvement, but not enough to open the eye.

A year later, the condition getting worse, i. e., the vascular tumor enlarging, another operation of a similar nature to the previous one was performed. No improvement.

In October, 1914, the patient went to a New York surgeon to subject herself to the radium treatment. This treatment was refused, injury to the eye being feared. An operation at St. Luke's Hospital was performed instead. This operation gave considerable improvement. Patient was able to slightly elevate the upper eyelid.

Improvement lasted four months, when the blood tumor again began to show evidence of enlarging.

In July, 1915, when I saw the patient, a bluish mass, very soft to the touch and about as large as a hen's egg, appropriated the upper eyelid.

There were numerous scars in the immediate vicinity of the eye, evidences of former operations. There was a very conspicuous cicatrix along the orbital ridge, evidently the remains of an attack on the supraorbital artery.

The location of the angioma made the boiling water treatment a rather hazardous undertaking. Under extraordinary precautions, three injections were given, covering a period of seven months (the first injection was given July, 1915, the last February 1, 1916). Owing to the great amount of cicatricial tissue about the angiomatous area, the full influence of the boiling water was to some extent interfered with. Nevertheless, the angioma was made to disappear. The patient is now able to open her eye to two-thirds normal. The color of the skin is almost normal.

The sight of the eye, which at first was very weak, is being gradually restored with the aid of a proper lens.

A REVIEW OF THE RECENT WORK ON THE ETIOLOGY OF PNEUMONIA.*

WILLARD W. DICKER, M. D.,
CHICAGO.
Assistant Professor of Medicine, Rush Medical College.

Pneumonia is the most frequent and has the highest mortality of any of the acute infectious diseases, and up to the present time there has been very little definite knowledge of how it is spread. We have known for a long time that practically all cases of lobar pneumonia were caused by the pneumococcus and we have also known that in a large number of normal mouths a pneumococcus could be found.

We have considered that either the virulence of the ever present bacteria suddenly increased or else the resistance of the body decreased and pneumonia then set in. In other words, we thought all cases of pneumonia were autogenic.

A few years ago work was started on the pneumococcus at the Hospital of the Rockefeller Institute in New York to determine the differences in the various races of pneumococci, and in 1913 Dochez and Gillespie reported the results of three years' work.

They separated four distinct groups of pneumococci by means of serum protection experiments and agglutination tests. These groups were absolutely distinct. The serum of an animal immunized against one group of pneumococci, would protect another animal against that group, but not against the other three groups. In a similar way the serum would agglutinate only the pneumococci against which it was immunized and have no effect on the other groups. There was no cross protection between the groups and they were unable to change one type into another. As far as these tests are concerned, the types are just as different as if they were different organisms.

This is not an unusual condition in bacteriology. In fact, there are many examples. In paratyphoid we have two distinct types; in dysentery we have several types which resemble each other in their cultural characteristics, but are decidedly different in their immunity reactions.

In studying their cases they found about 33 per cent. were caused by an organism which they arbitrarily called Type 1. These were all cases of average severity and showed a mortality of 25 per cent. In the second group, caused by an organism which is called Type 2, fall about 31 per cent. of cases. This type of pneumococci causes a more severe pneumonia and show a mortality of 36 per cent. The third group, caused by Type 3 organism, contains a much smaller number, about 11 per cent., but these are the most severe forms having a mortality of about 47 per cent. This Type 3 organism is the pneumococcus mucosus which has cultural characteristics distinct from the others. In the fourth group fall the rest of the cases and it is a heterogeneous group. The Type 4 organisms have no distinct characteristics. It includes 23 per cent. of cases which have the lowest mortality, only 6 per cent.

It was found by other men, in other cities and other countries, that there were the same types of pneumococci and present in about the same proportion and with about the same mortality in each group.

The next step was to find if these pneumococci all were present in the normal mouth. Dochez and Avery made cultures of the bacteria of the normal mouth and found that 60 per cent. of cases showed pneumococci, but found practically none of the first two groups. Now this is a rather surprising fact when you remember that Types 1 and 2 cause about 65 per cent. of all cases of

*Read before the Aux Plaines Branch of the Chicago Medical Society, October 26, 1917.

pneumonia. A few pneumococci of Type 3, the pneumococcus mucosus, were found and the rest all belonged to Type 4. The latter type causing only about 20 per cent. of all cases of pneumonia and these, the mildest type with the lowest mortality.

From these experiments it is clear that the majority of cases of pneumonia are not autogenic infections; that only the smallest group of very mild cases are of this kind, as Type 4 organisms are the only ones found in the normal mouth.

The next work was to find out how pneumonia is spread. Dochez and Avery made cultures of the mouths of contacts with pneumonia patients and in a large percentage they found pneumococci of the disease-producing type corresponding to the type of disease to which they had been exposed. These organisms persisted in the mouth for about 23 days on an average. They also found that the organism could be recovered from convalescence for a period of several weeks after recovery from the disease. It is clear from this work that carriers are very important factors in spreading the disease and are probably a great menace to the health of a community.

The next step was to find out if the disease-producing types were found anywhere else. Stillman in a recent article reports the results of the examination of dust for pneumococci. He first examined the dust from 62 rooms where no pneumonia had occurred and found pneumococci in 29 per cent., but they were all of the mouth varieties and in no case did he find a pneumococcus of Types 1 or 2 in the dust of a room in which there had been no case of pneumonia or carrier.

He then examined the dust from 183 rooms in which there had been cases of pneumonia. In these specimens of dust he found many pneumococci of the disease-producing types. The Type 1 organism was recovered 25 times and Type 2 23 times, and in each case the type was the same as that producing the disease. He also found that these organisms disappeared in a short time, usually before the carriers cleared up.

The next problem that suggests itself is, How often are pneumococci of Types 1 and 2 found in ordinary colds or bronchitis? but as yet there is no report on these experiments.

From these reports it is clear that the knowledge of the type of organism causing the disease is of great value. In the first place a very satisfactory serum has been prepared by Rufus Cole for the treatment of Type 1 only, so if we are going to use the serum we must know the type as it is useless in the other types. In the second place, it is of great help in the prognosis as the mortality is so different in the different types. Third, if we are going to gain any knowledge of epidemics we must know the types. And finally, if we are to judge the effect of any treatment we must know the mortality of the type we are treating, as it varies from 6 per cent. in the mildest to 47 per cent. in the most severe.

The determination of the type is not a difficult process and can be done in any laboratory. The method is as follows: The washed sputum is injected into the peritoneal cavity of a mouse. At the end of 4 or 5 hours the cavity is washed out and a suspension made of the bacteria. This is then tested against known immune serum and determined which one of the known sera agglutinate the organism. This agglutination takes place in about ½ an hour, so the whole determination can be completed in a few hours.

CONCLUSIONS.

In summing up this work there are a number of facts which have been brought out which make us modify to some extent our views on the epidemiology of pneumonia.

1. The pneumococci found in the normal mouth produce only a small percentage of the cases and these are of a very mild variety.

2. The organisms belonging to Types 1 and 2 cause the majority of cases of pneumonia and are not found in the normal mouth.

3. Pneumococci of the Types 1 and 2 are found in the mouths of contacts and the type in the contact always corresponds with the type causing the disease. They are also found in convalescents for considerable time.

4. Pneumococci of the disease-producing types are also found in the dust of rooms in which there has been a case of pneumonia and here also they persist for many days, but ultimately disappear. This suggests that in many instances pneumonia may be an air-borne infection.

5. Finally the mere presence of disease producing pneumococci in the mouth will not initiate a pneumonia, but if a susceptible individual

comes in contact with a case, a carrier or infected dust, he is in grave danger.

5611 South Boulevard.

LITERATURE

1. Biologic Classification of Pneumococci by means of immunity reactions; Dochez and Gillespie, J. A. M. A., September, 1913.
2. A further study on the biologic classifications of pneumococci; Avery, Jour. Exp. Med., December, 1915.
3. Occurrence of carriers of disease producing types of pneumococci; Dochez and Avery, Jour. of Exp. Med., 1915.
4. Bacteriology and specific treatment; Rufus Cole, Arch. of Int. Med., 1914; New York Med. Jour., 1915.
5. Report of studies concerning acute lobar pneumonia; Rufus Cole. J. A. M. A., August 18, 1917.
6. Epidemiology of Pneumonia; E. G. Stillman, J. of Exp. Med., December 1, 1916.
7. Further study on the epidemiology of lobar pneumonia; E. G. Stillman, J. of Exp. Med., October 1, 1917.

THE REMOVAL OF STEEL PARTICLES FROM THE INTERIOR OF THE EYE BY THE MAGNET.*

FRANK ALLPORT, M. D.,
CHICAGO, ILL.

The title of this paper indicates that I am to discuss the removal of steel particles from the interior of the eye by the magnet. I wish to say at the start that while it can be justly said that the magnet has been the means of losing some eyes by sympathetic ophthalmia, owing largely to injustifiable efforts to save eyes that should have been enucleated, yet its enormous benefits toward ocular and visual salvation far outweigh any claims that can be made against it in the other direction.

No attempt will be made to narrate the history of the magnet in eye surgery, nor to explain its mechanism or action. Neither will I discuss the merits or methods of the various localizing devices or x-ray procedures, as all these subjects are matters of history and can be found in books on ophthalmology. I shall also not dwell upon the subject of particles of glass, copper, wood, etc., in the interior of the eye, for that is a large topic in itself and would consume more time than I am allowed. What we are most concerned about is how we can best serve the interests of those people whose eyes have been penetrated with steel particles, how we can save eyeballs under these circumstances, and how we can perhaps also preserve vision.

A large majority of such cases are caused by hammering (cutting steel by hammer and chisel) the flying particle, therefore, proceeding from either the object being cut, the hammer or the chisel. Tools in good condition and not mushroomed or chipped on the ends are less liable to produce injury than tools in bad condition. Bad tools are sometimes the fault of the shop and sometimes the fault of the workman. It is important to find and preserve the flying particle as it may have an important bearing on subsequent litigation. It is strange that shop workmen plying trades inimical to eyes are so reluctant to wear Saniglass or other goggles. These glasses are unquestionably capable of protecting eyes from flying particles, and should always be used by workmen engaged in dangerous avocations of this nature.

Unless quite apparent, very few workmen believe there is anything in the eye after sustaining the injury, but such opinions are usually worthless and should be ignored. In all cases where there is even a suspicion of a foreign body being inside the eyeball x-ray pictures should immediately be taken, although it must be admitted that x-ray pictures are not infallible. I have been guided wrong in both directions. This is imperative for the benefit of the patient, the employer and the surgeon. Besides this, in case of litigation, the defendant and the surgeon should be able to say that x-ray pictures have been taken, or they will be likely to deeply regret such an omission. Two clear pictures should be taken, a front and a side view. In case a particle is seen these two pictures will indicate with reasonable exactness its location. They will indicate whether the particle is in the upper, lower or median plane; in which quadrant it is, and whether it is in the anterior, posterior or middle portion of the eye. (Most particles are in the vitreous chamber). The size, shape and long axis of the particle can also be seen. Sometimes, however, the particle is so far back that it is difficult or impossible by the x-ray alone to tell whether it is inside the globe or sticking in the retina, choroid and sclera, or entirely behind the globe in the connective tissue of the socket or posterior scleral coverings. If it is inside the globe the magnet will probably remove it. If it is sticking in the walls it may be impossible to dislodge and if so, will perhaps be best left alone, as, while floating particles are intensely dangerous, imbedded and stationary particles sometimes are comparatively almost

*Read before the American Academy of Railway Surgeons, Chicago, Oct. 17, 1917.

harmless and are certainly less injurious than ill-advised, forcible attempts at extraction by intraocular operative procedures with forceps, probes, scissors, magnets, etc. In making this statement I am not unaware of the fact that eyes have been saved by Jackson's scissors operation, Conner's strabismus hook procedure, the intraocular introduction of magnet points, etc., but I am still firmly convinced that if a steel particle cannot be withdrawn by the contact of a very powerful magnet in the lips of an ocular wound, it had better be left alone, for the particle under these circumstances must either be behind the eye or stuck fast in its coverings, or encysted or tied down by adhesive bands, under which conditions it is safer to leave it than to heroically attempt to extract it, an attempt, by the way, which will probably be crowned with failure.

Steel particles are sometimes sterile when they enter the eye, rendered so by the heating which accompanies their forcible splitting from the main mass of the metal. Such particles may become encysted and apparently harmless for a time and then "flare up" and destroy one eye and perhaps both. Steel particles will sometimes go completely through the eyeball and be lodged in the fatty tissue of the socket or entangled in the posterior connective tissue of the sclera. Such particles are best left alone, but it may be extremely difficult to judge of their position by x-ray pictures unless they are located quite far back in the socket. Of course, antero-posterior measurements of average eyes can be compared with the eye in question, but even then the point may be so fine as to be hard to settle. Under these and other difficult conditions it is best to resort to Sweet's Localization Procedure or other similar devices, and, in fact, I believe it would be best if this method was *always* used, as we certainly cannot know too much about these widely differing cases. It is their very diversity that makes them so interesting, for hardly any two cases are exactly alike. Nevertheless, it may be said that well-taken x-ray pictures will, as a rule, give us sufficient information for operative intervention. It is unwise to use the magnet for diagnostic purposes. It creates much intra-ocular disturbance if steel is there and the diagnosis can be made by gentler and surer methods. Besides this, the approach of the magnet does not always elicit pain or movement even when steel is in the eye.

Much information can, of course, be obtained by carefully studying the eye, inside and out, by magnifying lenses, direct and indirect illumination, a small Wurdemann transilluminator, and the ophthalmoscope. The situation, character and size of the wound should be observed. As in detective work, all the evidence should be carefully scrutinized. The surface of the cornea and sclera should be examined for the wound or scar (if the wound is healed), the iris should be scrutinized for a tear, the lens for a cataract, and also for the wound or track of the steel particle. The interior of the eye should be carefully inspected through a widely dilated pupil, by the ophthalmoscope, for the steel, for the trail of the invader through the vitreous, and for a wound in the walls of the eyeball. All possible information should be obtained, and the operator should be master of the situation before operative procedures are begun. With this information well in hand he may then lay out his plan of attack.

It must be remembered that even though an eye shows a corneal, iris or lens wound there may be nothing in the eye, for it is possible that the eye may have been wounded by a long, slender spicule of steel that has penetrated clear through into the vitreous chamber and then been removed by the process of winking by the injured man or by someone else. So we must make sure there *is* something in the eye even though this seems almost certain by the physical appearance of the eye itself. It is strange how impervious to attack the lens is at times, for I have seen a very few cases where an extremely small piece of steel had gone completely through the lens (as shown by the track of the particle) dropped into the vitreous chamber, had been extracted by the magnet, and recovered with a clear lens and good vision. These cases are very rare but they do occur. It is also noteworthy how the refractive media of the eye will sometimes give an erroneous idea of the size of a foreign body when seen by the ophthalmoscope. I remember one case where I saw what seemed like an enormous, glistening mass in the vitreous chamber which proved when extracted to be a most minute particle of steel. The question in my mind is, how can this hap-

pen once or twice and not be a constant condition? After deciding there *is* a piece of steel in the eye and locating its position, the next question to be determined is, what shall be done about it? There are some cases where the steel is so large or the injury so extensive that all hope of saving vision, or even a presentable eye, might as well be abandoned from the start. Of course, under these circumstances a prompt enucleation is undoubtedly the sanest course to be pursued. An eye is only good for two purposes: first, for vision and second, for appearances. When both of these functions are manifestly lost, and the eye, in addition, is certain to become a menace to the other eye, it had best be removed. But unfortunately, the patient and his wife and his friends have something to say about the matter and it frequently happens that the surgeon is compelled to be guided by their ignorant and panic stricken opinions. It must never be forgotten that subsequent litigation is always visible on the horizon in these cases, and it is best not to absolutely force such situations. If, therefore, enucleation is advised and refused this refusal must become a part of the case record, must be properly witnessed and the patient and his misguided and protesting friends must be made to realize that they will be compelled to stand under the burden of the responsibility. If these procedures are made solemn and emphatic enough very few patients will refuse the surgeon's advice. If, however, they persist in refusing enucleation nothing remains but to remove the steel and await results. These are hard cases to handle because after the steel is removed panophthalmitis may *not* immediately ensue, the eye may for a time look fairly well, then soften and atrophy, remain red, irritable and painful, and thus drag along a precarious and tedious existence, and finally terminate in enucleation or sympathetic ophthalmia or both. The longer the patient retains the eye the more attached he becomes to it and the more he resents enucleative advice. Meanwhile he is an expense to himself and to his corporation, he loses time, becomes demoralized, and is a trial to everybody who has anything to do with him. He should have had his worthless and dangerous eye removed at the start, gone back to work in about two weeks and learned to become accustomed to his new conditions.

Magnet operations cannot be discussed without considering the question of magnets. There are magnets of all kinds to be had, large and small, strong and weak, stationary and portable. Of course, the giant magnet of Haab is the best large magnet on the maket but it is very expensive and hard to get at the present time; there are not many of them in this country. The Victor Company makes a very good substitute and it is sufficiently strong for almost all cases. There is quite a variety of small and portable magnets to be had, devised by Hirschberg, Johnson, Sweet, Lippincott and others. Of these I believe Sweet's to be the strongest and the best and I think that if a surgeon is equipped with a Victor magnet and a Sweet magnet he will have all that he really needs. Some surgeons seem to think that the extraction of steel from the eye by a magnet is merely a pulling contest, or a question of pure magnetic force. This is not true. Force is, of course, necessary, but it should be properly and tactfully directed, as an operation of this kind may be one of the most delicate and difficult in the whole range of ophthalmic surgery. The steel must be removed with as little damage to the eye as possible and to do this often requires the acumen of the detective, the tact of the diplomat and the skill of the true surgeon. It is for this reason that a large and a hand magnet are necessary. The less the magnet power used, the less is the danger of sudden and forceful intraocular excursions of the steel fragment. The gentler the steel is removed, the better it is for the eye. Besides this, it is self-evident that a hand magnet can be much more dexterously used than the large Haab or Victor magnet. I believe it is best, therefore, to usually begin procedures with the patient use of the hand magnet; failing to get the steel, however, in this way, the large magnet must, of course, be employed. Large, unimbedded and unattached steel fragments will be about as readily extracted with a Sweet magnet as with a Victor or Haab magnet, but small or imbedded or attached pieces are better removed with the more powerful magnets. It does no harm, however, to first try the hand magnet.

While willing to grant that eyes have been saved by intraocular operative magnet procedures, I am convinced that such interference is, on the whole, unwise and that if steel can-

not be removed by contact of the magnetic point, to the lips of the wound, it had better be left alone for reasons already stated in this article. To feel satisfied, therefore, the surgeon must have a magnet of strength and reliability, and he should frequently, through the operation, test the magnet to be sure that the current is on. The hand magnet of Hirschberg is not very valuable, as it is too weak and does not attract steel appreciably unless it is brought into direct contact with it. This necessitates introducing the point inside the eyeball, which I believe should not be done, especially as there are hand magnets sufficiently strong to attract steel without intraocular introduction. A long, steady pull of the magnet is sometimes insufficient to attract the steel, especially if held back in any way, and then switching the current frequently on and off will sometimes produce the desired result; the current should be held *on* at the last, however, until it is ascertained whether the fragment is on the point of the magnet for if the current was left *off* at the last a small piece might be rubbed off and drop on the floor and be lost. It should not be forgotten that the longer and thinner the magnet point is, the weaker is its power. Whatever method of removal is decided upon, let it not be forgotten that the quicker the steel is removed, the better are the patient's chances. Therefore, operate at the very earliest possible moment.

A most important question is concerning the route of removal, whether it shall be the anterior route or the posterior route, or in other words, shall the steel be removed through the cornea or through the sclera? Haab insists upon the almost invariable corneal route and he has strong and numerous supporters. Some years ago when I, before the Chicago Ophthalmological Society, advocated the scleral route in most cases, my views were vigorously opposed. I am glad to say, however, that these views are receiving more and more endorsement. Of course, I lay no claim to being the originator of the idea. Haab claims that the anterior route is much safer than the posterior route, and that the particle can be drawn down to the anterior floor of the vitreous chamber through the Zonula of Zinn, up into the pupil and down into the anterior chamber. From here it can be extracted through a corneal opening without injuring lens or iris. Now, I am not saying that this cannot be done. I have seen Haab, and others, do it. I have done it myself. I have seen it beautifully drawn in pictures, therefore, I know it *can* be done; but I say emphatically that it is not easy to do and that conditions must be exactly right for its successful accomplishment. A large particle cannot be delivered in this way without damaging the lens and other tissues and a small piece with sharp points will be apt to become lodged and do damage in its passage forward. Of course, fairly large pieces can come through the lens and pupil, and as the lens is usually damaged anyway, it rally does not make so very much difference except that it increases the danger of secondary glaucoma, iritis, etc., by increasing the swollen condition of the lens, trauma, etc. But taking the most favorable view of the anterior route, it must be admitted that this method of removing steel particles from the interior of the globe necessitates the rapid and expulsive tearing of a rough and sharp pointed object through and over the most sensitive portion of the entire anatomy of the eyeball, and personally, I believe it is the most dangerous method of operating, especially in the hands of those who are not experts at this delicate kind of surgery. Haab evidently regards the vitreous chamber with sacred awe, but speaks reassuringly of the ciliary processes, the lens, the iris and the cornea. I would venture to somewhat reverse this idea, for I confess I stand in deadly fear of the anterior anatomy of the eye. I am not oblivious to the fact that scleral incisions and posterior deliveries may mean retinal detachment, infection, etc., but I do not think that these dangers are nearly as great as those involved in anterior deliveries. It should be said, however, that if the surgeon is determined to operate through the cornea he must use the strongest available magnet he can obtain, for only the strongest magnets are capable of drawing small particles of steel from the vitreous chamber into the anterior chamber.

I do not know how my method of procedure will please others, but such as it is, I will hereby give it, begging you to remember, that these cases are all different, and that they must be studied singly, and that all ideas and rules are liable to be broken at any time if conditions favor such variations.

1. If the steel particle is in the lens, or anterior to the lens, I extract it through the cornea. I make a peripheral incision, unless the corneal wound is still open. I make an iridectomy if the iris protrudes and if the lens is injured I squeeze, massage and wash out all the lens matter I can without inflicting too much interference. The original corneal wound, if still open, must be enlarged by sharp scissors, and if a peripheral incision is made it must be considerably larger than the foreign body. The corneal incision should be upward if possible.

2. If the steel particle is posterior to the lens I extract it through the sclera, especially if the original wound is still open; the wound must, of course, he somewhat enlarged, as a particle almost always requires a larger avenue of egress than it made in entering. Besides this, steel particles usually enter an eye by their long, narrow axis. I locate the steel by the x-ray and possibly by the localizer and make my incision as near it as possible. The speculum should, of course, be demagnetized. A triangular conjunctival flap is made with scissors, with its apex toward the cornea and the sclera is exposed. The incision in the sclera is made with a Graefe knife between two of the recti muscles, keeping away from the ciliary region. The incision follows the direction of the muscles, as it does not gape so much as it would if it was made in the other direction, and, therefore, heals much more readily. This also applies to the choroid and retina. Besides this, fewer blood vessels are injured and the hemorrhage is consequently less. The incision should be ample, as nothing is gained and frequently much lost, by endeavoring to pull and haul a large piece of steel through a small opening. It not infrequently happens, that even after a generous opening has been made, it will have to be enlarged by sharp scissors. The x-ray pictures should have been carefully studied and the direction of the long axis of the particle kept well in mind, for the magnet should be aimed in this direction, as the particle will be most energetically attracted to the magnet if its long axis and the aim of the magnet coincide. Be sides this, the particle will be more easily delivered through a small opening if it comes out lengthwise. This is a matter of great importance, and should never be neglected. I have made trial after trial to extract a piece of steel. I have shifted my position from one angle to another. I have almost given up in despair, only to be rejoiced at the last position by pulling the steel out easily with the particle and magnet touching each other end to end. The last axis was the right one, and all the others were wrong. It must be remembered, also, that the oftener a foreign body is knocked agaist the retina and choroid, the more injury is inflicted and the more the vitreous is disturbed. Therefore, each case should be carefully studied in every way and an effort made to extract the steel at the first attempt, with as little damage as possible and as gently as is consistent with efficiency. I have already sopken of the necessity, sometimes, of switching the current on and off to pull a particle loose from an attachment, and this procedure is not infrequently very efficient. I have also urged that instruments be not inserted inside of the eyeball, and I have devised two very small, sharp hooks (demagnetized) that an assistant can insert in each side of the flap to pull open the wound. The blunt point of the magnet can then be inserted within the opened wound, and it will then have better access to the foreign body. I only do this, however, after everything else has failed. It must be remembered that while the magnet strongly attracts steel, iron, nickel and cobalt, manganese steel is practically unmagnetizable, and will not spring to the magnet. After steel has been removed, or the attempt abandoned, the conjunctiva should be closed by a single suture. It is not necessary to suture the sclera, and it is dangerous on account of the force necessary to pass sutures through the tough membrane, which always causes some vitreous to escape. Besides this, the stitch inside the eyeball might produce infection. In spite of every precaution, however, and a highly satisfactory operation, the eye may eventually and perhaps quickly be lost.

7 West Madison street.

THE INTER-RELATION OF DISEASES OF THE EYE, THE NOSE AND NASAL ACCESSORY SINUSES, WITH REPORT OF CASES*

E. C. SPITZE, M. D.
EAST ST. LOUIS, ILL.

The importance of the relationship between affections of the eye and diseases of the nose and

*Read before the Southern Illinois Medical Association, November 2, 1916.

nasal accessory sinuses is being impressed upon us more and more as we continue to study and treat these cases. If we consider for a moment the close anatomical relation of these organs, the reason for this becomes manifest.

In the first place, we have a direct communication between the conjunctival sac and the nose by the way of the lachrymal canal, through which the infection can, and does, travel from the nose to the eye. Next we come to the sinuses. The frontal sinus adjoins the orbit at the junction of the superior and internal orbital walls toward the front. The ethmoid cells form a large portion of the internal lateral wall of the orbit posteriorly and the maxillary sinus is in direct relation with hte inferior wall, the roof of this sinus forming the floor of the orbit. One can etasily understand how purulent material from the sinuses, transgressing these boundaries, can penetrate into the various areas of the orbit. The optic nerve is in close relation to the sphenoid sinus and posterior ethmoid cells, often a thin plate of bone separating them, as has been demonstrated in a large number of sections made through the sinuses of many specimens.

The third, fourth and sixth cranial nerves are in close relation to the sphenoid, sinus and post-ethmoid cells. A considerable portion of the venous blood from the anterior sinuses finds its way into the ophthalmic vein through the supra-orbital, frontal and ethmoid veins.

The disturbances in the eye and orbit are brought about in one of three different ways:

1. By a direct extension of the inflammation or a passage of the infection from one to the other, as in lachrymal abscess, inflammation of the conjunctiva, corneal ulcers and inflammation of the optic nerve and retina.

2. By pressure. The pains and headaches are usually pressure symptoms. Choked discs and hemorrhages in the retina have been observed. You can readily understand that when one of these sinuses is filled with pus there will be some pressure on the surrounding structures. Swelling and puffiness of the eye, and even a proptosis or bulging forward of the eye may occur.

3. Toxemia. Many of these cases have a temperature above normal. Some of the headaches are no doubt due to the absorption of the toxins. Post-optic neuritis leading to atrophy of the optic nerve, and some of the motor palsies, such as a paralysis of the accommodation or of the external rectus muscle, or even of the entire motor apparatus of the eye.

We must distinguish between eye conditions caused by some disease of the nasal sinuses and those referable to some other local or systemic trouble. Failing to recognize these important etiological factors, we find that our patients do not improve under the usual treatment, or they will improve somewhat after a few treatments, then remain stationary for a time, and then suddenly and from no apparent cause, while under active treatment, relapse into a condition as bad or worse than when treatment was first begun.

Or what is worse still, as in cases of ulcer of the cornea, postoptic neuritis, retinitis or swelling of the optic disc, valuable time will be lost in the delay occasioned by not recognizing at once the true cause of the trouble. Then, too, we must be able to determine to what extent certain symptoms such as inflammations, headaches, pains, lassitude, muscular imbalances and vertigo are due to some condition in the eye itself, and what portion can be referred to some nasal or sinus trouble, since in not a few cases, we find that both are at fault and each contributes a certain amount to the symptoms present. You can readily see that the whole subject of the relation of eye affections to diseases of the nose and nasal sinuses is of great importance, not only to the specialist in this line, but to the general practitioner as well. It is you who are often called upon first to treat these conditions and you should know why you fail to get results. Most of these cases come to the oculist because the aches and pains from which they suffer occur in and about the eyes, or not suspecting that they have some nasal sinus trouble, they blame their eyes for their suffering and seek relief through this source.

Many eye conditions are caused by diseases of the nose and accessory sinuses, from a simple tiring of the eyes in near work to severe inflammations, ulcerations, swelling and even blindness.

The ocular complications of nasal and accessory sinus disease may be divided into three principal classes: *Non-inflammatory, Inflammatory, Mechanical.*

1. Non-inflammatory or functional, such as weakness or imbalance of the muscles of accommodation or loss of accommodation, also palsies

of the recti muscles. In these cases the eyes tire quickly in near work and frequently there is a slight redness of the eyes and a feeling of moisture. "The eyes water," as they express it. They may or may not have headaches. On examination we find either no error of refraction or the error will be so slight an amount as to be negligible. Even making the necessary measurements with trial lenses aggravates them. Most of them, however, have real errors of refraction, hyperopia, myopia or astigmatism or a combination of either with astigmatism, but correcting them ever so carefully does not give them entire relief. They are not comfortable with the glasses or without them. At times they will go on for days and even weeks using their eyes in near work with comfort, then again they are miserable for a long period of time from the least attempt at using their eyes. These are the cases that go from one doctor to another, then to an optician for glasses, and then to an oculist, and if he does not at once recognize the true cause of the trouble but succeeds in giving them partial relief for a time by a little treatment or carefully fitted glasses, or both, they will try another oculist. And so they drift here and there, to the New Thought Healer, the Osteopath, the Electro Therapeutist, the Chiropractor, etc. They take aspirin, headache powders, liver pills, kidney balm, digestive tablets, dispepsia cures, tonics and blood purifiers. They diet, take a rest, go to the country, but only to return to their work with their same old aches and pains. Some do get relief by a change of climate, for it is a well known fact that some nasal conditions do improve on changing climate or simply removing from the city to the country.

They complain of about all the different kinds of headaches imaginable. They may have just a heavy tired feeling about the eyes, pain between the eyes in the region of the frontal sinus and extending deep into the head, described as boring or throbbing in character. The pain may extend to the vault of the cranium, thence to the occiput or along the temples, down behind the ears and even to the shoulders and arm, depending upon the particular sinus involved.

2. Inflammatory. Many of the cases come under this class. In a conjunctivitis complicated by nasal sinus trouble, the symptoms complained of, such as pain, photophobia and lachrymation are as a rule more severe than in ordinary conjunctivitis, while the purulent discharge is less than would usually be looked for with such severe symptoms. The blood vessels, both superficial and deep, are much engorged and the reaction of the pupil to light often very sluggish so that many of these cases give the picture of an iritis. A small drop of a weak solution of atropin will dilate the pupil widely but give very little added comfort to the patient. The usual remedies that are found so valuable in other forms of conjunctivitis bring but little comfort and improvement here, and very often weak solutions of silver nitrate, gr. 1 to oz. 1, or even sulphate of zinc in the same strength actually prove quite irritating. There is nearly always considerable injection of the conjunctiva around the cornea, and in not a few cases, some swelling of this area, simulating very much a certain type of the so-called vernal conjunctivitis or spring catarrh. At times these cases will show this inflammation and swelling only on one or two sides of the cornea, preferably the lower side. This is explained by the fact that the infectious material coming through the nose from the lachrymal canal lies behind the lower lid and the eye becomes macerated, as it were, from the pressure of the lid against the ball. The same thing happens with the upper lid, and I have seen cases of this type that resembled very closely a mild trachoma with pannus. The diagnosis is made by the absence of typical trachoma granulations and the so-called sago-seed deposits together with the presence of symptoms of nasal or sinus disease.

Phlyctenular Conjunctivitis and Keratitis, characterized by the appearance of one or more grayish elevations in the conjunctiva around the corneal margin or upon the cornea, is an eye disease of childhood, appearing at from three to fifteen years of age. Although slow in its onset, it is very severe in its manifestations, causing its little victims much discomfort and suffering. Usually monocular, it may affect both eyes. Inflammation, excessive lachrymation, photophobia and the formation of the small infiltrated elevations called phlyctenules (from a Greek word meaning blisters) are its chief characteristics. Many authorities claim it to be tubercular in origin. In the past these cases have always meant a long course of treatment, both local and general, and often tried both the skill and

patience of the physician as well as the endurance of the parents. Now that we recognize the true cause of the disease, by the aid of the rhinologist they are gradually relieved of their distressing symptons as the nasal conditions improve and they recover in a comparatively short time with but little eye treatment, usually such as can be administered at home.

Inflammation of the lachrymal canal or tear duct with the accompanying abscess formation I believe to be almost always due to some nasal disease or defect in the nose, causing an obstruction to the free passage of tears, or by an actual extension of the inflammation from the nose into the tear canal. But little can be accomplished in the treatment of these cases without the cooperation of the rhinologist. With his aid most cases of epiphora, or overflowing of tears, are quickly relieved if properly treated in time, thereby avoiding an unpleasant complication, a lachrymal abscess and the resultant fistula if the abscess opens or is lanced. Several cases of lachrymal abscess have come under my observation in the last few years where it was possible to reduce the swelling and establish drainage through the nose by some well directed nasal treatment and a few flushings of the sac by injections, but without probing.

Ulcers of the cornea and ulcerative keratitis are frequently caused by nasal disease, and when they do appear in this connection are very persistent and often the ulcers multiply rapidly. They appear under almost any form and with or without hypopion, i. e., pus in the anterior chamber of the eye. But all cases are alike in that as a rule they do not get well until the nasal condition is treated and improved.

Diagnosis. The diagnosis of eye affections complicated with nasal disease is made by a careful study of each case. Every symptom must be traced from its first appearance to the present time. The location, time of onset, severity and duration, and what measures have given relief. Since the sinus disease may be further complicated by syphilis, tuberculosis or kidney disease, these must be thoroughly searched out or excluded as the case may be. Hence the Wassermann test, tuberculin reaction and urinalysis are of great importance whenever indicated. The one most complained of symptom is headache. This appears in all possible forms and degrees of severity. Usually it begins in and above the eye, and may extend to any part of the head and even down the neck to the shoulder and arm. At first there is a dull ache, gradually increasing in severity until finally it becomes so severe as to almost make the patient frantic. The pains are deep in the head and boring in character, often causing nausea and even vomiting. Many give a history of having had nasal hemorrhage, either recently or at some time in the past, often many years ago. Others will deny having headaches, but will admit on close questioning that they do have some pain in the head. Again other cases will give no clinical history excepting the eye trouble and the diagnosis must be made from the findings in the eyes and by exclusion.

When only one side is involved, the aches and pains will be referred to that side. This is an important sign and often points the way to a correct diagnosis. While most eye diseases caused by a direct infection or by some systemic trouble sooner or later affect both eyes, most eye troubles caused by nasal or sinus disease are monocular in character. Lying down and closing the eyes usually does not bring relief, but on the contrary, often aggravates the condition. A splendid history of sinus disease was given me a few months ago by a lady seventy years of age, when she stated that for thirty years, from the time she was twenty, she suffered with very severe headaches in the right side. They would begin just above the right eye and extend only just back of the eye and into the temple. At first the attacks came on only about every six months, then five months and so on until she had them every six weeks or more often. She said they were so severe and persistent that the only thing to give her relief was morphin and atropin in doses sufficient to "lay her out," as she expressed it. Many remedies had been tried, including keeping the pupil dilated with atropin, injecting the nerve with alcohol, leeches and blisters to the temple, hot and cold applications and various forms of internal medication, but all to no avail. The attacks ceased when she was fifty years old.

These conditions often follow an attack of the grippe or a "cold in the head." The diagnosis is complete when the rhinologist finds the condition in the nose or the sinuses which is causing the eye trouble. And here is where good team work is necessary. You must know your rhinologist

and be sure that he is really able to diagnose a sinusitis and whether or not there is a suppuration.

Prognosis. This depends entirely on the treatment of the conditions in the nose or the sinuses. When the true cause is recognized and properly treated, improvement begins almost at once and complete recovery is the rule. In old, chronic conditions where the nasal treatment is begun too late, or in cases of the aged and feeble, where proper nasal treatment cannot be carried out, the prognosis is very doubtful, and at times the vision, or an eye, is lost.

Motor Paralysis. Miss C. G., aged 8 years. Two months ago right submaxillary gland is swollen so that the family physician made a diagnosis of "possible mumps." Five weeks ago had an ear ache and pains in the right temple. Was out of school for ten days. No treatment. Two days ago had diplopia and eyes crossed. Examination showed diplopia of 20 degrees. Paralysis of the right external rectus muscle. Given calomel gr. 1/10 every two hours. Next day complete paralysis of right rectus muscle. Examination by rhinologist showed acute bilateral sphenoid sinus suppuration. Confirmed by Dr. G. Sluder of St. Louis. After four daily nasal treatments the eyes were straight and diplopia disappeared.

J. S., aged 31 years. Boiler maker helper. Foreign body had loged in right eye a week ago. Two small foreign bodies removed from cornea. Examination showed a partial ptosis of upper lid of right eye which turned slightly up and out. Vision equaled 20/40. Ophthalmoscope showed nothing to account for lowered vision. Had taken a cold and was feeling sick. Was given aspirin gr. 5, and calomel gr. 1/6 every two hours. Next day much improved and returned to work. Three weeks later returns, much worse. Right eye rotates outward only. Complete ptosis of upper lid. Pupil dilated and does not react to light or accommodation. *Diagnosis.* Complete ophthalmoplegia, externa and interna. (Paralysis of the third cranial nerve.) Patient now quite deaf in right ear. Pains in right temple. Right side of nose partly obstructed. *Diagnosis, Sinusitis.* Rhinologist found a right sphenoid sinus suppuration. Give K. I. gr. 10 t. i. d. One week later not improved. Sphenoid and ethmoid sinuses opened. Three weeks later pains in the head entirely gone. Some action of the upper eye lid. Eight weeks after operation, some action of all eye muscles. Three months after operation vision normal, right and left. Much better action of eye muscles.

Case Reports. Miss M. M., aged 3 years. Marked chronic conjunctivitis of the left eye. There was considerable photophobia and excessive lachrymation, patient carrying the head down and holding the hand over the eye. Conjunctiva of globe much congested and a little thickened around the cornea. Pupil reacted to light. There was a purulent discharge from the nose, left side. Nasal examination showed enlarged tonsils and adenoids. One week later adenoids removed. Improvement of the eye very slow until the discharge from the nose had about disappeared. Two months later patient returned with eye much worse. Superficial keratitis in upper half of cornea. Patient had taken cold and the suppurative rhinitis which was present with the adenoids had become aggravated. This is a typical case of this class. The eye recovered just as soon as the nasal condition returned to normal, which it did under proper treatment.

Miss D. P., foreigner, came in March 15, with a marked chronic conjunctivitis and ulcerative keratitis. The eyes were much inflamed, photophobia and lachrymation so that patient could hardly find her way alone. Again there was that characteristic thickening of the bulbar conjunctiva which is so often found in these cases. Appropriate treatment for the eye was ordered. She had a purulent discharge from nose and nasal examination was advised at once. However, this was not done, and patient returned twelve days later with the eyes no better and a recent ulcer of the cornea of the left eye. Nasal examination showed a purulent rhinitis. After four nasal treatments, over a period of ten days, the left eye, which was the worse, had very much improved as also had the left side of the nose and she made an uneventful recovery under home treatment.

Miss V. D., aged fifteen years, was brought in February 28, from Carlyle, Illinois, with the history that the right eye had been very sore and painful for two weeks, and that daily treatment by the home physician had given no relief. The right eye was very much infected, pupil adherent to the lens capsule. Grayish exudate in anterior chamber. Patient very uncomfortable. Pupil dilated irregularly with atrophine. Calomel, gr. 1/10 every two hours ordered and atropin and acid boric for instillation in the eye and bandaged. Two days later anterior chamber clear. Pupil widely dilated and round. Deposit of exudate on anterior lens capsule. Improvement continued nicely for two weeks and it was decided to let her return home, but three days later she returned with the eye almost as bad as when she first came. There was a drop of yellowish pus in the anterior chamber. This sudden return of the trouble made me very suspicious of the nasal involvement since it was clearly a toxic condition, carried through the lymph channels. Examination of the nose showed a purulent rhinitis on the right side, with, however, very little discharge from the nose. With a little nasal treatment the whole condition cleared up and in two weeks the patient returned home to resume her school work. One month later her sister reported patient had no further trouble.

Miss M. H. School girl, aged thirteen years, in good health, vision failed rapidly Friday at school. On Sunday, October 6, right eye vision fingers at two feet. Left eye vision 20/200. Ophthalmoscope showed choked disc right and left. Gave a history of having nasal catarrh. No pains or headaches. No

supra-orbital tenderness. No history or other symptoms of lues, tuberculosis or brain tumor. Diagnosis, sinusitis. Examination showed sphenoid sinus suppuration. Daily treatments for four days gave no relief, so on fourth day, October 10, the sinus was opened. Next day, right eye vision equaled fingers at five feet. Second day after operation, right eye vision, fingers at ten feet, left eye vision, 20/100 Ten days after the operation right eye vision 20/200, left eye vision 20/80. November 19, right eye vision equaled 20/20. Left eye vision 20/20, plus.

Mrs. C. V. V., aged thirty-eight years, referred May 19, 1914. Has twins three weeks old, healthy. Always in good health. Blurring of vision past week. Right eye vision 20/30. Left eye vision 6/100. Ophthalmoscope shows right eye normal. Left eye central retinitis with exudate and a few small hemorrhages. No history of lues, kidney troubles or tuberculosis. The doctor had made frequent urinalyses for some weeks, all of which were negative, and since the condition was monocular a diagnosis of sinus disease was made and nasal examination revealed a sinus suppuration. She was given proper nasal treatment and in three weeks right eye vision equaled 20/20, left eye vision 20/30. Later left eye vision 20/20.

Mrs. G. G. S., aged twenty-nine years. A large robust woman in good health. First noticed blurring of vision of right eye four days ago. No pain. Right eye vision 20/200, left eye vision 20/40 plus. Compound hypermetrophic astigmatism in the right eye. Retinochoroiditis in macula 1/8 inch in diameter. Diagnosis, sinusitis. Purulent sinusitis found. On opening sphenoid sinus no pus seen to escape but when the posterior ethmoid sinus was opened there was a free escape of pus. Eighteen days later right eye vision 20/24. Area of retinitis pigmented.

Miss L. J., aged twenty-four years. Referred May 14. Stenographer. General good health. Figures blurred with right eye for a week. Several visits to Dr. P. unsatisfactory. Nose and throat examined by Dr. S., but no diagnosis. Right eye vision 20/40, left eye vision 20/20 plus. Ophthalmoscope shows a very small area of subretinal exudate between disc and macula. Diagnosis, sinus trouble, and rhinologist reports a swelling in olfactory fissure. Treated. Hydrorg. chlor. corros. gr. 1/14 t. i. d. One week later right eye vision 2/80. Right post-ethmoid and sphenoid sinuses opened. Next day vision 20/30. Later 20/24 and remained. Scar at site of trouble in retina.

THE MANAGEMENT OF SQUINT.*

ROBERT VON DER HEYDT, M. D.,
CHICAGO.

This subject, I think, is of great importance and I will endeavor to outline proceedings which may appeal because of the simplicity of their application, and especially as they call for little to do on the part of the parents. Too many duties imposed on the latter soon lead to the discontinuance of all efforts. Many of these are misdirected, as for instance, the often so superficially suggested occlusion of the fixing eye, therefore, so rarely practiced with any result. Also the use of the amblyoscope—at first an interesting toy soon discarded and of no value in cases of children. An adult mentality and extreme demands on patience and perseverance are necessary for its successful use. I am further sorry to see cases now and then where prisms have been prescribed by incompetent ophthalmologists—surely a miscarriage of therapeutic effort.

Parallelism of the visual axes in the infant is only an approximate one, a part of nature's efforts at facial symmetry.

Worth very correctly says that the motor coordination power of the ocular muscles keeps the eyes approximately straight in the absence of any disturbing influence until the fusion center begins to develop, which is at the end of the sixth month, and the latter is not fully developed until at the end of the sixth year. Under normal conditions, therefore, permanence is only brought about by the education to macular fixation of both eyes plus fusion of the images. The development of these functions brings about binocular vision and by means of it absolute orthophoria is maintained. The latter, existing for years or almost a lifetime, may be lost when binocular vision is no more possible, as for instance in the loss of vision in one eye later in life, so that a squint may develop. In order to bring this about a tendency toward strabismus—a muscle imbalance must have been present.

This "phoria" was overcome by the visual acuity which held the eyes in parallelism. Now, with the vision of one eye lost, a deviation is the prompt result.

In our observations on strabismus let us first exclude alternating squint in which cases we find good vision and fixation in each eye, but the muscular imbalance of more than usual high degree thus favoring alternating suppression of the images, also the well understood cases of squint in high hypermetropia where the accommodation necessary to overcome it brings with it an excessive convergence and thus produces a periodic and later a permanent inward squint. These latter cases are promptly corrected by the early adjustment of correcting lenses to be worn con-

*Read before the Chicago Ophthalmological Society, Oct. 15, 1917.

stantly, thus correcting the refractive error, bringing about perfect fixation and fusion, therefore, stereoscopic vision and inhibiting the impending development of amblyopia in the converging eye.

It is the other kinds of squint I wish to consider. The kinds that are less easily handled.

The first three or four years of life present the critical period in which so much can be done to assist nature in establishing permanent ocular parallelism. This can only be accomplished by a thorough and early study of each case and its possibilities based on a full understanding of the etiologic factors producing them.

About these more obscure cases it may be said in short that any factor present in one eye, that retards the development of fixation or makes it less accurate in that eye, as for instance, anisometropia, monocular high astigmatism, amblyopia or any lowered visual perception in it from any cause, will retard the development of fusion and make it impossible. This in itself, the inability to learn fusion, because of the lowered fixation qualifications of one eye, will not in itself necessarily give rise to a squint, it will only predispose. If, however, we have added thereto in the same pair of eyes a tendency to deviation from any cause, a muscle imbalance, the development of a strabismus is inevitable.

Therefore, expressed in other words, the visual undervalue of one eye plus a tendency toward deviation will bring about a squint. These cases are common, difficult to handle and therefore often neglected. Early attention is most important. Delay favors the development of monocular vision, the one eye increasing its visual value by taking the work onto itself, the other learning more and more to suppress. With amblyopia, exanopsia gradually increases the difference between the two eyes, until nothing more can be done to coax back the reduced visual acuity.

Our first step in the proper handling of the case is to win the confidence of the child so that a careful retinoscopy can be done under a cycloplegic. It is best to introduce the child to the darkroom at the time of the first visit and give a few flashes with the mirror which proceeding is as a rule sufficient to avoid future rebelliousness.

When the retinoscope discloses a sufficient refractive error to reduce visual acuity or hypermetropia calling for several dioptres of accommodative effort, glasses should be given.

A period of sufficient length to enable the parents to teach the child the recognition of numerals is now allowed until the next visit. This is done whether glasses are given or not. This enables us to make accurate record of the visual acuity of each eye, as on this factor is dependent the character of our efforts and by means of it we may measure progress in the management of the case.

The visual acuity of each eye with and without glasses, also how much that of the better can be reduced by a cycloplegic must constantly be in mind for the purpose of intelligently studying the squinting eye, its possibilities and later the improvement in it. The use of atropin in the good eye to force the use of the mate is an old practice and I plead only for the recognition of its limitations and its application in the selected number of cases which can be modified by this method. Results can only be obtained if we really force the use of the bad eye and we can only do so if we succeed in making it temporarily the better eye of the two by the cycloplegic's action on its mate.

What good would it do, for instance, to thus lower the visual acuity of the good eye for a period of months or years, as is often done, if in spite of this blurring it still would remain the one with best acuity?

Therefore, the necessity of studying the visual acuity of both eyes under various conditions.

If atropinization of the good eye is sufficient to make it the secondary eye, I order its use according to the calender in the following manner: for instance, beginning January 1 a drop twice daily for three weeks, then stop and come in last week of February. Resume March 1 for three weeks and continue in a like manner. If advisable I deprive the better eye of its correcting lens during the atropin period and substitute a smoked lens. This calls for the use of cycloplegic about half of the time, or even a longer period can be adopted, and makes it necessary for the patient to make only six visits per annum.

Parents will persevere as a rule if you make it reasonably easy for them.

I have in some cases continued the use of monocular cycloplegia beyond the sixth year and during school time ordered hometropin on Saturday and Sunday. If these methods cannot be adopted owing to the low visual value of the squinting eye, some method of occlusion may be tried. I use periodically a hollow black patch with adhesion strips, so arranged that there can be no "peeking." A definite schedule is given to be rigidly enforced.

Some cases are hopeless and must await later years for mechanical adjustment by operative proceedings, but many may be saved this necessity; disfigurement will be avoided by returning and holding a squinting eye to parallelism to say nothing of making it a useful one by methods somewhat on the order I have suggested and, owing to the limitations of time, outlined in so brief a manner. I will add an interesting case illustrating heredity in three generations:

Grandmother has marked exophoria, divergence under cover, but parallelism with glasses correcting the refraction. The mother has exactly the same condition. The father brings to the family eyes with practically normal vision in one eye and a very high degree of astigmatism in the other; no muscular imbalance. This refractive condition is transmitted to the child from the father and the exophoria from the other side. The astigmatism of the one eye uncorrected was changing the exophoria into a periodic exotropia, divergent squint. The threatened permanent strabismus I have succeeded in avoiding by bringing up the vision of the highly astigmatic eye by a proper lens, illustrating what can be done toward binocular vision by aiding an eye handicapped in fixation by reduced visual acuity.

In a case of convergent squint in high hypermetropia existing for one and one-half years with marked amblyopia exanopsia by the use of atropin in the fixing eye for several years, according to the calendar system outlined before, I have measurably raised the visual acuity of the squinting eye and finally brought about parallelism.

Perseverance and the adoption of a definite system, if the latter will not impose too many duties upon the parents, will lead to surprisingly favorable results in the many cases so often left to permanent strabismus.

SOME MEDICAL AND SURGICAL PROBLEMS OF PROPHYLAXIS IN ECLAMPSIA.*

W. H. CONDIT, B. S., M. D., F. A. C. S.
Instructor Obstetrics and Gynecology, University of Minnesota Medical School.
MINNEAPOLIS, MINN.

Introduction. There is no more fascinating and interesting subject in medicine, unless it be cancer, than the toxemias of pregnancy, and it is no doubt the mystery still surrounding the etiology that makes it so. The word eclampsia, more properly eclactsma (Kossman), is of Greek derivation from a word meaning "to flash," to shine out brightly, and as used today, covers such a "multitude of sins" that the term should be absolutely lost in the light of the modern surgical-obstetrical era. A much more appropriate and scientific term to apply to this dreaded condition of the pregnant woman, would be, convulsive or comatose toxemia, for surely there is nothing bright or shining in the storm of symptoms that usher in this condition, nor is the affliction one that comes as a flash, for if the patient has had proper supervision there are many signs and symptoms that exist, to warn of the approaching danger. The writer believes that convulsive or comatose toxemia is a preventable complication of pregnancy if the patient is under constant, skilled care and observation throughout the entire antepartum period, the advantage of which is surely due every pregnant woman.

Etiology. From Hippocrates' time, students have been searching for the toxin or toxins causing this condition, but to date we are still in the dark. The etiological agent has been found in faulty liver metabolism, in the mysterious endocrine gland system, in nervous irregularities and a thousand other sources, but final analysis has disproven all theories. May the cause not be in the ingestion of a certain meal, or one article of food, or even in an emotional stimulation, anything that may disturb the balance of the metabolism in the physiological machine? Every physician has heard his pregnant patient make some such remark as: Doctor, I had such a craving for grapes I ate a whole basket of them today; or, I was so hungry for something acid I ate a dozen of oranges yesterday; or more fre-

*Read before the Chicago Medical Society, Oct. 17, 1917

quently, I had such a hunger for sweets I punished two pounds of chocolate creams the other day. Who can say but that some such intemperance acted as the spark in the powder can? Lossee and Van Slyke conclude that toxemia of pregnancy cannot be attributed to failure in diaminization of the amino acids, nor to a moderate degree of acidosis which is present. The constancy of the low urea ratios in the urine of convulsive toxemia (eclampsia), and the high ammonia in the urine of pernicious vomiting, indicate that the nitrogen distribution of the urine is a most valuable element in the diagnosis of toxemias of pregnancy. It is the rare and unusual forms of toxemia that throw us off the track, that some skilled physiological chemist has constructed for us; for example, the choreic types, polyneuritis, the thyroid complex types, brain pressure, and the ones ushered in by emesis gravidarum in the first months of conception; even climatic and barometric conditions have been credited with causing of eclampsia.

How can we explain such statements as Schmidt made when he said, "It is more than a mere coincidence that six women succumbed to eclampsia in his service in 1912 while only three in seventeen died during 1911, although all were treated on the same principles"? In 98 cases, 1907-1912, 23.47 per cent. died. This is quite conclusive evidence that each case is a law unto itself.

Age and Frequency of Convulsive Toxemia. Schultz reports from studies in the Colonial Hospital, Trinidad, that the age has no import, as the condition developed in patients from 14 to 42 years of age. In the Port of Spain they occurred one in 58.64, and in the entire colony of Trinidad one in 99.36. The ratio of eclamptic cases to the number of deliveries was one in 23; in twin pregnancies, one in 10. He remarks that it was interesting to note that most of the patients admitted to the hospital lived upon an exclusively vegetable diet, so that the use of meat had no part in causing albuminuria or convulsive or comatose toxemia. More than one-third of these patients had their convulsions after the birth of the child. Mortality for the mother was 22 per cent.; for the fetus, 34 per cent. Statistics are so unreliable, the writer feels like apologizing for quoting them, but two points in the above report deserve close study and consideration. First, the large group normally vegetarians; second, the high maternal mortality and large number of cases suffering from convulsions post partum, a condition to be deplored and doubtless due to inability to observe the cases early and all through pregnancy, for proper prophylaxis would eliminate all post partum convulsions.

There is no doubt that the past year has been an unusual one for frequency of this condition. It was a subject of remark among the members of the American Association, meeting at the last congress. All the large clinics report an increase in the number per 100 cases. The writer was impressed with the unusual number in his private practice the past five weeks; two requiring premature induction of labor and two cases visited in consultation; the first of these, spontaneous labor began two hours after consultation; the other required induction of labor at eight and one-half months.

Our experience, in the small clinic at the University of Minnesota, where 640 cases were delivered the past twelve months ending Oct. 1, 1917, is no less startling. After a period of seven years with but seventeen cases of toxemia, we had a series of thirteen cases with one death in the period of seven months ending Sept. 26, 1917. The fatal issue occurred in a case that was comatose on entering the hospital and never rallied, even after rapid emptying of the uterus. Our record of thirteen cases of toxemia in 343 (229 in hospital, 114 out-patient department) pregnancies, covering a period of seven months, following a series of but seventeen cases in 3,326 (1,878 in hospital, 1,448 out-patient department) pregnancies, surely provides a subject for serious consideration.

TREATMENT

Prophylactic. Any attempt at classification of the toxemias of pregnancy for treatment would be only confusing; each case should be considered as a possible case demanding conservative or perhaps heroic treatment. We have concluded, after studying the blood pressure of all our cases at the university clinic the past two years, as well as our private cases, that in the elevation of the blood pressure we can find our first danger signal. The blood pressure should be determined in each patient as soon

as pregnancy is suspected, in order to have, as near as possible, the normal pressure of the patient, independent of the pregnant state. It then should be carefully taken every three or four weeks, together with careful analysis of the urine. If there is a suggestion of an elevation of the systolic reading the pressure should be taken more often, and in event of rapid, steady rise, taken every day or two. A systolic pressure of 160 suggests approaching danger; 180 is serious; 180 with diastolic of 100 or below is alarming, and if with this finding and appearance of albumin or casts, or both, with headache, disturbed vision, nausea and restlessness, labor should be induced immediately, but be not too hasty. "Accouchement forçe" in such cases is a dangerous proceeding, the shock alone attending may defeat entirely the results possible to attain by a more conservative, gradual induction of labor.

The following synopses of three cases will serve to illustrate the two points the writer wishes to present, namely, the importance of constant observation of the patient as a prophylaxis against convulsive or comatose toxemia and the value of conservative, slow, methods of emptying the uterus as compared with accouchement force.

Case 1. Patient of dark complexion, aged 27 years; normal weight, 116 pounds, 2 para. History negative for fevers of childhood or adult life. Married 6 years; first child, male, weighed 6½ pounds at birth, normal delivery and puerperium, child living and well. Second pregnancy, three years ago, went two weeks over expected time of maturity, gained weight to 166 pounds and had marked hydramnion. Presentation breech, child lived but sixteen hours, cause of death undetermined, as patient was cared for by Christian Science methods, but was known not to have had any kidney complications; blood pressure was never taken. Up to the seventh month of the third pregnancy the urine finding remained negative and blood pressure normal. At this time domestic troubles arose and patient had much worry and loss of sleep. I watched her with unusual alertness and four weeks before labor began, headache and unusual nervous sensitiveness developed; blood pressure arose to systolic 145; rest in bed and restricted diet failed to make any impression on the rising blood pressure and a trace of albumin appeared. The blood pressure continued rising ten points every four days to 180 systolic; 110 diastolic, with a proportionate gradual increase in albumin in the urine. Eight days before expected maturity I planned to induce labor and began by the mild method of one ounce of castor oil and ten grains of quinine sulphate. Patient was complaining of excruciating migraine. Labor pains began mild at midnight ten hours following the above therapy. Nitrous oxide and oxygen was begun at 8 a. m. following day, and female child of 7½ pounds delivered at 12:15. Patient complained of the sever migraine throughout her labor and the blood pressure reached 210 systolic, 125 diastolic before delivery was complete, remaining at this point for one hour when it began a gradual decline, reaching 140 systolic; 90 diastolic, 24 hours following delivery. On the 9th day (Sept. 29, 1917) following delivery, blood pressure is 130 systolic, 85 diastolic, with urine free from albumin and casts.

Case 2. Patient dark complexion, aged 24 years, weight 140, married three years, 0-para. History negative for any illness of childhood. Tonsillectomy at age of 13. One uncomplicated induced abortion two years ago; date of expected confinement, Sept. 8, 1917. At the end of the second month of pregnancy, patient suffered an attack of so-called ptomaine toxemia, accompanied by vomiting, abdominal pain and diarrhea. Three weeks following this attack she developed an otitis media of left ear. Paracentesis was performed, with uncomplicated recovery from the infection. Blood pressure remained normal and urine negative. Twenty-five days before date of expected confinement, blood pressure reading was systolic 152, diastolic 100, albumin ++. The following day the systolic pressure was 170, diastolic 110. The pressure rose ten points daily the following three days, when slight edema about the eyes developed, mild migraine and the characteristic sweet odor of the breath. Three No. 17 bougies were introduced into the uterus Aug. 12 at 5 p. m. Mild pains began at 7 p. m. Membranes ruptured at 9 p. m. Nitrous oxide anesthesia was begun at 12:45 a. m., and two hours following a male premature child was born weighing 4 pounds, 3 ounces. One and one-half hours after delivery the blood pressure had dropped 25 points, and continued falling 5 points daily, on the tenth day reaching 130 systolic, 98 diastolic, and at the end of the second week post partum 120 and 79. The albumin seemed to diminish in proportion to the lowering of the blood pressure, but it did not totally disappear until the end of the fourth week. At present writing, seven weeks post partum, patient is in the best of health, nursing her babe, which weighs 6½ pounds.

Case 3. Patient, light complexion, aged 23 years, weight 110, married two months, gravida i; history negative for fevers or illness. Urine analysis negative and blood pressure normal. Albumin appeared in the urine the middle of the third month of pregnancy with slight rise of blood pressure. Patient was provided a restricted diet and increased rest each day, but it made no impression on the progress of the toxemia. She was then put in bed on a milk diet with slight improvement, and allowed up again with restrictions. Increased symptoms again appeared and patient was put in bed on a liquid diet for four weeks, but in spite of the treatment, the albumin increased at an alarming rate, casts appeared and the blood pressure went up

to 220 systolic, 150 diastolic, accompanied by marked edema of face and ankles, almost total blindness and marked migraine. As is usual in such cases, the patient was so anxious for a child she was almost willing to chance her life, but, of course, there was nothing to justify such a sacrifice. Three bougies were inserted in the uterus; 11 hours following, labor set in and delivery of a non viable fetus resulted 10 hours following onset of labor pains. In the first 24 hours following emptying of the uterus, the blood pressure fell fifty points and continued its downward course rapidly, accompanied by a proportionate decrease in the albumin, until at the end of three weeks the condition of the patient was quite normal except for the impairment of vision. This condition was six weeks recovering to normal. The patient no sooner recovered her normal state, when she wished to try it again, but I feared a repetition of the first experience and set about building the patient up and attempting to educate her to an even walk of life, as she had an impulsive temperament and went to extremes in many ways. I remember asking Dr. James Markoe, of the New York Lying-In Hospital, what reply he gave his patients when they asked how soon they could again risk pregnancy following an attack as above described. He replied, "As soon as you can build them up to an average physical resistance, for who knows but that the previous attack was due to one meal or to one article of food?" Two and one-half years following therapeutic abortion on this patient, I advised her she could try again. The blood pressure and urine was analyzed every week during this pregnancy, with negative findings throughout, remarkable gain in weight to 140 pounds and exceptionally good health. Thirty-two days before expected maturity patient presented with a trace of albumin and an elevation of systolic blood pressure to 140. The patient was not informed of any irregularity, but under pretense of guarding her against any accident the last month, I succeeded in placing her upon a restricted diet and more rest, without giving any concern, thus preventing any nervous reaction. The albumin did not develop beyond a trace, too small for quantitative estimation and the blood pressure did not go above systolic of 150. Patient had a normal delivery, after 13 hours of mild pains and two hours of labor under nitrous oxide-oxygen administration, convalescence uninterrupted.

In the analysis of the above three cases, illustrating the mild, medium and extreme type, we have graphically pictured what advantages obtain in the careful study of our patients throughout the antepartum period, and a practical illustration of the conservative method of emptying the uterus compared with the accouchement-forcé or hysterotomy method.

The author takes the liberty of speculating or making a guess on the possible etiological factors entering into the three recorded cases.

Case 1. Patient passed through two months of domestic trouble, associated with alcoholic intemperance and infidelity of husband, coupled with attending unpleasantness and worry of private detective service. Could not the toxemia have been of nervous origin?

Case 2. Patient suffered an attack of food poisoning (so-called ptomaine toxemia) and in four weeks an attack of otitis-media (suppurative), either one of which can very easily be credited with being the cause of the disturbed metabolism.

Case 3. Patient, of impulsive, erratic temperament, would sit up half of the night on some puttering foolish task at hand, and was a victim of perverted appetites; she ate ten oranges in one day and a basket of grapes on another, either stunt sufficient to act as a monkey-wrench in the machinery.

Medical Treatment. The management of toxemia of pregnancy will naturally vary according to the degree or severity of symptoms affecting the mother and to the effect of the method or methods adopted upon the life of the child. Again, we will be influenced by the condition of the fetus, whether the child is viable in utero, dead in utero or delivered. The therapy must be directed at, 1, elimination of the toxine; 2, control of convulsions, if present, and, 3, the emptying of the uterus. The treatment must be directed to the vascular system where the toxine or toxines are being distributed to the organs where the characteristic symptoms appear, such as nephritis, jaundice, blindness, headache, edema of the lungs, infarcts in the placenta, convulsions and death of the fetus in utero. If faithful observance of the suggestions made in the prophylactic treatment be carried out, the medical therapy will be simple enough, as the symptoms and conditions will be of such mild character as to require only correction of diet, rest in bed for a time and the increasing of elimination through the natural channels, namely, bowels, skin and kidneys. If we fail to make an impression on the elevated blood pressure or on the other existing symptoms more heroic methods must be adopted. In our clinic we use what is known as the Stroganoff method, with the modification that we administer veratrone or veratrum, as indicated, to reduce the blood pressure while preparing for

emptying the uterus. Stroganoff first published his method in 1900 and was considered the most important contribution on the subject of the management of convulsive toxemia (eclampsia) that has appeared since Veit reported his success with morphin. The following is his routine drug treatment:

	a. morphium muriate	0.015
In 1 hr.	b. chloral hydrate	2.0
In 2 hr.	c. morphium muriate	0.015
In 4 hr.	d. chloral hydrate	2.0
In 6 hr.	e. chloral hydrate	1.5
In 8 hr.	f. chloral hydrate	1.5

This is the usual treatment covering a period of 21 hours. The Stroganoff method aims at reducing to a minimum the irritability of the nervous system. Delivery is hastened as necessary and fluids are supplied by rectum or mouth from 150 to 250 c.c. four or five times daily. There is no fast rule for the size of either the dose of morphin or chloral; the dose must be established for the individual case in accordance with the reaction from the initial dose. He uses chloroform at first after the first dose of chloral until the effect of the chloral is noted. Great care should be exercised in the use of chloroform in any case of toxemia of pregnancy as it may precipitate a liver pathology, present in so many toxemia cases, that might be suddenly fatal. Spaulding has recently reported a series of 20 cases from the clinic of Stanford University Medical School, together with an excellent review of different therapeutic methods.

Surgical Treatment. The rapidity with which symptoms of convulsive or comatose toxemia disappear on emptying the uterus, is sufficient evidence that in advanced toxemia the uterus should be evacuated as soon as possible. There is such a variance of opinion as to the proper method of procedure in such cases, that nearly every operation known in obstetric science has been advocated. Vaginal hysterotomy; abdominal hysterotomy (Caesarian); decapsulation of the kidney; lumbar puncture; venesection, have all been advised. The conservative medical and surgical treatment will give the best results, but if the observation be carried out, as suggested, in the early antepartum period, we will not be confronted with the problem of selecting the best medical or surgical emergency treatment. Dr. Geo. L. Broadhead has a very interesting review of "The Treatment of Eclampsia With Special Reference to Vaginal and Abdominal Section" in the *American Journal, Obs. and Gyn.*, May, 1917. In the analysis of the thirteen cases treated at the University of Minnesota Hospital during the period of seven months ending Oct. 1, 1917, I find that two were past 30 years of age (one 40, the other 35). Eleven were between ages of 21 and 29. Five were primipara, 8 multipara gravada ii to viii. Eleven registered a blood pressure of 170 systolic, or above, the highest being 243 with a diastolic of 145. Two had a systolic pressure below 130, but one of these had albumin + 3. The quantitative albumin ranged from a trace to 9 gm. per thousand, the highest registration occurred in the case resulting fatally. Only three suffered convulsions. Two were discharged from the hospital with a systolic pressure of 160, apparently otherwise in perfect health. Veratrone was employed for reducing the blood pressure with very gratifying results. One was delivered with low application of forceps four hours after admission, one midforceps after eighteen hours in labor; one breech, normal delivery, premature child; in four cases labor was induced by the colpeurynter; three cases labor was induced by bougies; four cases normal delivery, cephalic presentation. Eight full-term babies were delivered, one dead; five prematures, four dead.

There is nothing new in the application of the blood pressure findings to the study of obstetrics. It began with the work of Stephen Hales in 1733; but like many other valuable principals useful in the medical world, it has not had its full developed efficiency demonstrated and perfected until recent years. The first well-known paper on observations of blood pressure in eclampsia was published in 1897 from "Paris Maternite" by Vaquez, who voiced rather an extreme view after his observations. He states that if the blood pressure is very high, convulsions *will* follow, and that eclamptic seizures will never occur in case of normal tension. Vogeler supported Vaquez in his extreme ideas, and their views have been quite generally accepted, until the later and more careful observations appeared, such as reported by Lynch in 1913, who states it is possible in rare instances to have eclampsia with hypotension. The writer is of the opinion

that by the careful observation of blood tension antepartum, respecting its appearance as a danger signal, and correcting the physiology of the patient immediately, many cases of toxemia of pregnancy may be prevented. Furthermore, in event of continued hypertension, conservative painstaking methods of emptying the uterus are to be chosen over the accouchement forcé, or major abdominal operating, of necessity associated with the administration of an anesthetic and more or less shock.

The writer is also of the opinion that we will in the near future be provided with more simple methods of determining the co-efficient of each individual's metabolism, also with means of correction if irregular and of maintaining a constant, even chemical balance. The most valuable encouragement for the above possibilities can be found in the recent results of the work of Kendall at the Mayo Clinic in his remarkable research into the physiological chemistry of hyperthyroidism. There appears a striking similarity between the symptomatology of hyperthyroidism and the symptom complex of toxemia.

Kendall gives as one explanation of the constant relation between the tetany or convulsion, and the low urea and ammonia in the urine, that there is some substance which is an intermediate compound between ammonia and urea and this substance is highly toxic to the animal organism. By means of a very high rate of nitrogen metabolism, and an extreme diuresis, Kendall succeeded in separating one of the intermediary compounds in the formation of urea. Furthermore, there is the strongest evidence that this pre-urea compound is concerned in the production of the toxic symptoms by an injection of amino acids. Therefore, it seemed probable that the greatest factor in determining which type of reaction any animal would give was whether or not ammonia could be properly metabolized. Hence it would appear when we apply this procedure in the toxemias of pregnancy, if the conversion of ammonia into this intermediary substance proceeds too slowly, resulting in a high concentration of ammonia throughout the body, depression or coma results; if ammonia be converted into this substance too rapidly, faster than can be converted into the urea, irritability and convulsions result. Let us hope for the discovery or recovery of a balance in this chemical process.

CONCLUSIONS.

1. There is no doubt but that there has been a large increase in the number per 100 of reported cases of toxemia of pregnancy during the past two years. Let us hope this increase is due to more efficient reporting, rather than to actual increase in number afflicted.

2. Blood pressure observations provide the means for early detection of pre-convulsive toxemia and gives the first warning of an impending danger, together with a measure of its seriousness.

3. Persistence of arterial hypertension is the definite and absolute signal for termination of pregnancy as a means of preventing convulsions or coma.

4. Hypotension is a more common finding in the early months of gestation, but may also occur in the later months; is usually prophetic of shock or hemorrhage during approaching labor, but it is possible for it to accompany a serious toxemia, in rare instances.

5. Systolic hypertension of 150 c.c. of mercury should be considered a danger signal and close study, for presence of other evidences of toxemia, made.

6. When possible the conservative treatment and use of bougies or the colpeurynter as the means of inducing labor, is to be chosen, rather than accouchement forcé or hysterotomy.

7. While one attack of convulsive toxemia does not predispose another, we may have superimposed a chronic nephritis, which, unless carefully supervised following an apparent recovery, may result in a permanently damaged kidney. Hence a warning: "Do not discharge your patient from your observation too soon."

THE TREATMENT OF HEMORRHOIDS UNDER LOCAL ANESTHESIA.*

CHARLES J. DRUECK, M. D.,
Professor of Rectal Diseases, Chicago Hospital College of Medicine; Rectal Surgeon to Fort Dearborn Hospital,
CHICAGO.

I have chosen this subject because hemorrhoids occur under very different conditions and in all classes of patients. Many methods have been de-

*Read before the Chicago Medical Society, Oct. 31, 1917.

vised for relieving them and each method has its advantages in well selected cases. Your treatment is half done when you select your case, determine its proper treatment and know what results to expect. The reason you treat so few rectal cases is not that they are infrequent but rather that your patients do not wish to take a general anesthetic and be confined to bed. Patients suffering with piles are prone to use domestic remedies and nostrums until they are physical wrecks from loss of blood and pain, all the time refusing an operation. With our present knowledge it is not always necessary or wise to give a patient a general anesthetic. Practically all uncomplicated cases, and they are numerous, may be operated upon with a local anesthetic and thus eliminate the danger of a general anesthetic to life from heart, lung or kidney complications as well as lessening pain and the danger of secondary hemorrhage due to vomiting.

The word hemorrhoid comes from the Greek meaning to flow with blood, but this is not always a true definition, because frequently hemorrhoids exist without bleeding. Hemorrhoids are varicosities of the anal or rectal blood vessels or blood clots beneath the mucous membrane or mucocutaneous tissues of these parts. There may be no hemorrhage, or if it occurs, it may be periodic in some cases and constant in others. The tumors may be wholly within the rectum or wholly outside or both inside and out. One patient may suffer pain, and difficulty in defecation and another suffers no inconvenience at all. The clinical picture is quite variable.

Predisposing Causes. Hemorrhoids are a result of some previous condition which acts differently in each patient. Circumstances and surroundings not only influence the induction of the piles, but are also factors in our choice of treatment, which sometimes may be operative or again must be tentative. Hemorrhoids may be found at any age of life. They are uncommon in children, but several good authorities have reported cases. Trunk (Tuttle) reported 39 children under fifteen years of age of whom 5 were under one year old. Young adult and middle life is the most frequent age because such factors as environment, habits and constitutional peculiarities are most active then. In advanced life the absorption of the peri-rectal fatty tissues, the relaxed muscular tone, constipation and sclerotic changes in the liver and blood vessels contribute to produce hemorrhoids, but we also find hemorrhoids frequently in nervous, anemic individuals because of nerve and muscle exhaustion which causes circulatory relaxation and dilatation. For this reason melancholic, choleric, sallow individuals who suffer from liver diseases are prone to hemorrhoids.

Once the tumor has formed, subsequent inflammation will produce a hyperplasia of the connective tissue about the veins and there is no possibility of the tumor being absorbed, but it must be removed surgically. There are some cases of hemorrhoids to be operated upon under a general anesthetic when other surgical conditions need attention, but most cases may be satisfactorily operated on under local anesthetic, causing but from a few hours to two days detention from business, but the work should be done at the hospital to protect against chance of secondary hemorrhage. A local anesthetic has a distinct advantage in aged, timid or nervous patients.

The anus is one of the most difficult regions to satisfactorily anesthetize. Nerve blocking operations are difficult because of the many filaments from a number of sources. This region is exceedingly sensitive and the position of the patient, who is furthermore apprehensive and restless, adds to the technical difficulties of the operator. An intimate knowledge of the local anatomy, its nerves, muscles and blood vessels is important. The external sphincter is the most important muscle and its location and size must be studied. The sympathetic nerves descend within the rectal wall and are sensitive to traction even though the hemorrhoidal and coccygeal nerves be well anesthetized. The operator should also bear in mind the individual contraindications to the employment of local anesthetic, such as highly nervous or hysterical patients, or an idiosyncrasy of the patient to the drug employed and our preparations should include having on hand the antidote for the anesthetic drugs employed. The surroundings of the operating room, together with the nature and extent of the operation and the probable time it will require must all be carefully considered.

Preparation of the Patient. The patient should be as carefully and thoroughly prepared for a hemorrhoidal operation as for a laparotomy. The

bowels should be thoroughly emptied with a laxative the day before the operation, and from this time on the diet should be moderate in amount and absorbable. The night before the operation the peri-anal region is shaved and thoroughly cleansed and a sterile dressing applied. Three hours before operation the patient is given a one pint enema. One hour before the operation he should have a cup of soup or milk, as it is better not to operate on an empty stomach. He is now given a hypodermic injection containing morphin gr. ¼, hyoscin gr. 1/100, and atropin gr. 1/150. Visitors should now leave him. The operating room should be fully prepared before the patient is brought in so that no unnecessary disturbances arouse him. Strict silence should be observed by all in the operating room. The table should be covered with a thick pad and the patient should be provided with a pillow to help make him comfortable. Always remember that he is not anesthetized and every sound and touch is appreciated by him. He should, therefore, be handled as little and as carefully as possible, not tied or strapped in any way. The left lateral prone with the hips raised is the most comfortable position for the patient and the most satisfactory for the operator. I use one-half per cent. solution of novocaine for infiltration of the skin, thus permitting a liberal amount to be used without danger of toxicity, as novocaine is but one-seventh as toxic as cocaine. Quinine-urea solution is not used for the skin because its injection is painful. The success of a local anesthetic depends upon a careful and thorough infiltration of the whole field. I use a 26 gauge needle. A 30 c.c. syringe is filled with warmed anesthetic solution. The skin in the posterior raphe one-half inch back of the anal margin is touched with phenol on a swab and after waiting a few minutes the skin is picked up between the thumb and forefinger of the left hand and the needle introduced at the cauterized spot. A few drops of novocaine solution injected here causes a wheal to arise and after waiting a few moments the needle is advanced and another injection made, causing another wheal. In this manner the needle is carried forward just under the skin at a distance of one-half inch from the anal opening. When the needle has been advanced its full length on one side it is retracted to the posterior commissure but not withdrawn from the skin and the infiltration carried up on the other side of the anus. When the full depth of the needle has been reached it is withdrawn and inserted at the most anterior wheal just made and the infiltration continued to the anterior commissure and around on the opposite side until the wheals meet those previously produced. In this way the whole anal opening is anesthetized while the needle is always kept one-half inch out from the edge of the mucous membrane. This procedure blocks the inferior sphincteric nerves. The mucous membrane of the anus is next anesthetized by placing a pledget of cotton wet with 10 per cent. solution of quinine-urea into the grasp of the sphincter. Wait ten minutes for anesthesia to be complete and then introduce the left index finger into the rectum above the external sphincter, hook the finger over this muscle and by slight traction, draw it down and steady it while the needle passed through the skin at the anesthetized bullea is plunged into the sphincter muscle, and 20 minims of the novocaine solution is deposited in the substance of the muscle. This deep injection is made in four places, one on either side of the commissures, front and back one-half inch out at the entrance of the lesser sphincter nerves. The index finger within the anus will assist in guiding the needle to the proper depth. A needle, long enough to reach the deeper layers of the sphincter is required, otherwise dilatation of that muscle will be incomplete. A syringeful of fluid is now deposited immediately in front of the tip of the coccyx to block the coccygeal nerves and thus further facilitate dilatation. This infiltration procedure consumes 15 to 20 minutes and must be carried out carefully until anesthesia is complete. Then the finger within the rectum massages the sphincter and if the muscle has been well injected it will soon relax, but if not sufficiently anesthetized will contract upon (bite) the finger and we must wait longer. Never begin manipulations pinching or operating until the anesthesia is complete. This applies with equal force to local and general anesthesia. As the sphincter relaxes under the massage, a second finger of the same hand is introduced and if needed a finger of the other hand and the massaging and stretching continued until the capacity of the sphincter is reached. This maneuver must be carefully performed that the mucous membrane be not torn or the anal margin

not otherwise damaged. Just what is the full limit of the sphincter varies with individuals and the operator's experience is the criterion in each case. By this method there is never any danger of rupturing the muscle, as may occur under divulsion with the speculum. When the muscle has been thoroughly relaxed it will so remain long enough for us to operate. This slow, but thorough dilatation of the sphincter, is an essential factor in lessening the post operative pain by limiting sphincteric spasm. The hemorrhoids and the anal mucous membrane prolapse well under this treatment and the whole pile can be seen and reached. Although prolapsed internal hemorrhoids may be operated on without dilatation of the sphincter, I always make this procedure part of my technic because without it some part of the pile is very liable to remain internal to the sphincter and will cause a recurrence at a future time. Therefore, even if the hemorrhoid is within reach without dilatation the sphincter should be stretched, that all hidden nodules may be found. Also if the stump retracts above a tight sphincter a subsequent hemorrhage might not be detected for some time. Take plenty of time in making the dilatation because prolonged relaxation cannot be obtained if the stretching is roughly or hurriedly performed. Having opened the anus and brought the hemorrhoid well outside, it is now infiltrated with a solution of one-half per cent. of quinine and urea hydrochloride, using enough solution to distend the tumor thoroughly. The pedicle of the tumor should be injected and also the normal mucous membrane for one-half inch above the pile, as otherwise traction on the pile in handling will cause pain by stretching the sympathetic nerves which come down the rectum from above. By waiting five to ten minutes now before operating the best effect of the quinine is obtained and post operative anesthesia is much more satisfactory. The anesthetizing solution should be slowly forced into the pile so as to avoid a sudden painful distension of the tissues. After the needle has been inserted it may be turned in different directions and the tumor well infiltrated. If more than one puncture is made into the hemorrhoid the solution runs out as rapidly as it is injected. Sufficient fluid should be injected to blanche a part of the hemorrhoid. If several hemorrhoids are to be removed they are all injected at this time before the removal of any is begun. Quinine solution is used for this part of the infiltration because it produces anesthesia, which lasts several days, during which time healing is well established. The anesthetizing solution should be used in as limited amount as will obtain the necessary results, because excessive quantities produce a large exudate which causes a sense of fullness in the rectum for several days.

Operation. Having satisfied ourselves that the whole field is thoroughly anesthetized the hemorrhoid is picked up at its upper end with a hemorrhoidal forceps and an incision beginning in the normal mucous membrane one quarter inch above the hemorrhoid is carried down on the left side of the pile and beginning again at this upper point a similar incision is carried down on the right side of the tumor. The upper pole of the hemorrhoid is now lifted out of its base, exposing the vessels as they enter the tumor from above. The vessels are now grasped with a thin artery forceps and the tumor cut free. The lateral incisions are now carried down to and around the lower border of the hemorrhoid. These lateral incisions are to be kept close to the hemorrhoid, or preferably in that part of the mucosa covering the side walls of the pile. The wound is now deepened all around the hemorrhoid to the connective tissue structures beneath the tumor and the pile is shelled out by blunt dissection. This enucleation of the tumor is almost a bloodless operation. The pedicle in the grasp of the forceps at the upper end of the wound next receives our attention. The size of this pedicle will vary with the size of the hemorrhoid, but even when the tumor is large and fleshy the pedicle is slender because it consists only of blood vessels and the connective tissue supporting structures between them. The pedicle is now lifted well up and examined to make sure that it is thoroughly freed from the mucous membrane and a number 0 catgut ligature is slowly but firmly tied close down at the base. One end of the ligature is now threaded on a curved noncutting needle and passed through the base of the stump beneath the ligature. The forceps and upper part of the stump are now cut free about one-eighth of an inch above the ligature and the thread that transfixes the stump is tied over the stump and across the encircling ligature, thus preventing it from slipping. As the stump is released it retracts

well into the bottom of the wound and the mucous membrane edges fall together over it. It is important to tie the stump carefully, as it is small and if not properly secured secondary hemorrhage may occur. The wound edges fall together in good apposition but should be secured by two or three small interrupted sutures. If the tumor is in the anal canal its lower edge may rest at the white line where the skin and mucous membrane meet. If the tumor is of the interno-external variety it must be treated as though it were two distinct hemorrhoids, one internal and the other external. There will be but little oozing for the first day or two but only such as can be cared for by a small external dressing. The lateral incisions are to be kept close to or better upon the edges of the pile to conserve the mucous membrane between the several tumors and not endanger the caliber of the rectum or the anal canal by possible subsequent contraction. The strips of attached mucous membrane left between each two operative wounds will also assist in rapid and satisfactory healing. If this work is poorly performed stricture of the anus may result. Care must be exercised that none of the incisions extend beyond the anesthetized area. The hemorrhage during the operation is slight. The large vessels are not injured because they enter the hemorrhoid at its upper part and run parallel with the length of the bowel just under the mucous membrane. If a large vessel is accidentally severed it is an inferior hemorrhoidal vessel at the lower border and may be picked up and ligated separately or included later in the sutures approximating the wound edges. The operation need not be hurried and the utmost care and gentleness should be exercised in the use of tissue forceps, retractors, and in sponging. Skin tabs at the muco-cutaneous junction at the anus must be cut off flush with the skin surface. It is important that these skin tabs be removed at the time of the operation. Otherwise they engorge and inflame and become most painful.

When the patient is put to bed keep him in the Sims' position or else prone (on his face). Do not allow him to lie on his back, because in this position the middle and superior hemorrhoidal vessels in their upper portion are in a vertical position. At the pelvic brim they bend a sharp angle and the abdominal contents are superimposed. All of these obstruct and as the hemorrhoidal vessels have no valves there is a back pressure and a tendency to swelling, a giving away of the stitches, and more pain as well as a delay in repair.

No opiate is needed. If the patient has been properly prepared the bowels will not move until a purgative is given, after which the bowels are emptied each day by administering an enema of 1 ounce of olive oil in a pint of warm water given through a soft rubber catheter. These patients expect defecation to cause terrible pain, and I presume their fear acts as an inhibition to evacuation. The accumulation of flatus in the bowel is frequently an annoyance. If it occurs, urge the patient to void it. If left to himself he usually restrains the desire because he is afraid bleeding may occur and he will often spend a wakeful, restless night when he could have relieved himself without any possible harm. The patient is advised to use the commode instead of the bed pan, thus contributing to an easier evacuation without straining. When the inclination for a bowel movement is felt an injection of one ounce of warm mineral oil into the rectum will facilitate defecation without trauma.

I never use bichloride of mercury during the operation nor in any of the after-dressings because it sets up a teasing tenesmus as soon as the sensory nerves recover. Neither do I use a rectal tube, it cannot do any good, and it always makes the patient uncomfortable.

The advantages of this technic are:

1. The operation is thorough and is satisfactorily performed under local anesthetic.

2. The sphincter muscles are not disturbed or injured by forcible dilatation as a speculum is not used.

3. The ligature is so applied as to securely hold the vessels and secondary hemorrhage cannot occur.

4. The stump is small and buried, and the wound edges are closely approximated so that the resulting scar is smooth and level with the surrounding mucosa instead of being raised. Therefore, it does not obstruct the passage of the feces. It is this raised hard scar, left after operation for the removal of hemorrhoids, which more than any other one factor tends to induce a recurrence of the trouble.

5. All of the diseased tissue is removed, therefore recurrence is impossible, but enough

of the mucosa is left to maintain in good order the tactile sensibility of the anus.

6. The scar of the wound conforms to the axis of the anal canal and cannot narrow the lumen of the bowel.

7. The post operative analgesia of the quinine solution continues for several days and the patient is up and out in a day or two.

30 North Michigan Avenue.

LIQUID PETROLATUM AS AN ANTISEPTIC*

H. D. JUNKIN, M. D.,
MILFORD, ILL.

For the past two years the writer has been using liquid petrolatum as a means to combat infections. The results have been so striking that a report of our findings seems permissible.

It is a well known fact that oily substances coming in contact with bacteria tend to encapsulate them and prevent their multiplication. On this theory the use of the so-called liquid vaseline was applied to various forms of infection.

A very striking example of the effect of this treatment occurred in a severe infection of the abdominal wall of a very fleshy female patient. The case had been operated on for tubal infection with a resulting fecal fistula. The abdominal wound soon opened the entire length, also the surrounding skin became cratered with sloughing and gangrenous spots. The usual measures had been resorted to with little effect. On the sixth day of the infection sterile liquid petrolatum was injected into the fecal tract; into the many recesses made by the pus; and finally the wound filled with the liquid. Also the sterile compresses were soaked in the oil before applying to the wound and the dressing changed three times in twenty-four hours. The tissue infection was destroyed in seven days and many fresh, healthy granulations in evidence. The fecal fistula closed two weeks after the first oil treatment.

In abscesses of the abdominal cavity, especially resulting from the appendix, our results with the oil have been pleasing. Here the cavity is washed with the oil at the time of operation by use of a syringe and the cavity filled with the oil. A rubber tube leads to the bottom of the cavity through which the oil is passed at each dressing.

In wounds of the extremities the sterile dressings are soaked in the oil and then applied to the parts. Any pus cavities forming in such wounds are washed out by means of a syringe filled with the liquid petrolatum.

SUMMARY

Oily substances tend to encapsulate the bacteria, thus destroying the infection.

Great comfort is afforded by the oil dressings because of the non-irritating quality of the oil and its prevention of the dressings adhering to the wound.

Owing to the low specific gravity of the liquid petrolatum it is especially effective in reaching the many recesses of an infected area.

Some twenty-five infected cases have been treated with the oil. No other antiseptics were employed. The results were all very striking.

*Read before the Iroquois-Ford County Medical Society. September 4, 1917.

THE COURSE OF THE TUBERCULOUS DISEASE AT DIFFERENT AGES.*

JOHN RITTER, M. D.,
Assistant Professor in Medicine, Rush Medical College; Physician in charge Tuberculosis Clinic.
CHICAGO, ILL.

Tuberculosis presents an ever-changing picture, beginning with the primary infection in early infant life, gradually invading various organs and tissues of the body, and terminating with the fully developed pulmonary tuberculous disease in adult life.

As early as 1889, the immortal Robert Koch, in his studies which led to the discovery of tuberculin, was able to demonstrate in susceptible animals certain facts which since that time have been considered as definite and indisputable laws.

He observed, for instance, that if a guinea pig be inoculated with live, virulent tubercle bacilli of the human type, nothing will be noticeable for ten to fourteen days; that after that time a nodule begins to form at the point of inoculation, which soon begins to soften, break down and discharge pus; that this ulcer shows a nonhealing tendency and at the same time the regional lymph glands become enlarged but do not break down. If, now, a second inoculation be made, after a period of about six weeks, this

* Read at the meeting of the Livingston County Medical Society at Pontiac, Illinois, November 1st, 1917.

behaves quite differently from the first, in so far that it is not followed by a period of incubation, the regional glands do not become enlarged, but that the seat of inoculation is followed by an ulcer, which simply sloughs, discharges pus and rapidly heals, and that repeated reinoculations favorably influence the primary ulcer in healing. He observed further that the primary inoculation, as well as all subsequently injected bacilli, usually remained at the point of entry and do not enter the circulation as such, and that only the glands nearest to this primary lesion are secondarily involved.

Similar observations are constantly made when animals are inoculated artificially with live tubercle bacilli, and a close study of the natural infection in both man and animals has proven that entrance of human tubercle bacilli into any part of the body, either through the cuticle, the upper air passages, confined to the tonsils, or by means of the bronchial tubes, follows similar definite laws; that is remaining usually at the point of entry for some time, during the period of incubation, and that subsequently through the lymph flow the nearest lymph glands are secondarily involved, and that repeated reinfections have a beneficial and healing influence on the primary or first infection.

Nearly all human tuberculous infection is spread from man to man, usually from a tuberculous adult to an infant, and in most infants and small children suffering from tuberculous disease it is possible to prove the presence of, or close contact with, an adult suffering from active pulmonary tuberculosis. This infant or early child infection is usually aerogenous, that is, by way of inhalation, and it is not necessary that this early contact infection be prolonged over long periods of time or oft repeated, as a single exposure of an infant to the surroundings of an active tuberculous individual for only a few minutes has been found sufficient to cause active tuberculous disease in later life.

Most primary lesions in this early or infant infection are clearly demonstrable in the lung tissue, and are either parenchymatous or subplural, and from these primary foci the regional lymph glands become secondarily involved. That this does take place was demonstrated first by Parrot in 1876; later by Küss, 1898; then by Nageli, 1900; and Albrecht 1907, 1909; and the recent and thorough work of Ghon, 1912, reconfirms on 184 autopsy findings this earlier work, and again the thorough and able labor of Dr. Miller of Madison, Wis., has corroborated this.

Primary foci usually originate in or near the lung structure that is the lesser circulation, but there is always in this early infection a strong tendency to spare this circulation and be more or less confined to the greater, only to return to a predilected involvement of the lesser circulation in young adult life and thence up to old age. Though the primary infection may take place in the pulmonary parenchyma, the subsequent lymph drainage, conveying bacillary bodies and their products, is usually away from the pulmonary tissue towards the regional lymph glands in and about the mediastinum, and only in exceptional instances do we find the pulmonary lymph glands secondarily involved, leading to rapid active pulmonary disease and speedy death of the infant.

What course the disease pursues after the primary infection has taken place depends mainly upon the amount of infecting organisms, their virulence and their finding ready lodgment in the human body; this makes tuberculosis primarily a quantity infection, how many bacilli are deposited within a given time; likewise upon the frequency of reinfection, if single or multiple; also, upon the virulence of the invading organisms and the sensitiveness of the young host. If the first or primary infection is massive—that is, if many bacilli, large in amount, virulent, and oft repeated in the child's early months or within the first year, enter the body, then no organ or tissue is spared from the invaders and the child succumbs from generalized tuberculosis and rarely sees the middle of the second year.

The number of those recovering from this early infantile tuberculosis is usually very small, the estimated mortality being anywhere from 95 to 100 per cent. All the remaining infants mildly infected in the first year of life, as well as all children after the first year, that is, during the second and third, either massively or mildly, form the great army which in the following years are the victims of some form of tuberculosis, and in all these so infected we will find, as a rule, that in this early infection the pul-

monary circulation is comparatively free from active disease, and that the tissues and organs supplied by the greater circulation stand the brunt of the invading bacilli. We find the glands about the hilus, and near the bronchial bifurcation, the epibronchial, peribronchial, tracheo-bronchial, broncho-pulmonary, even the tracheal enlarged, if they should, be incapable of holding the virus in check, then the mediastinal glands, as a whole, take part in this process, and, being more capable to check the inroads of the virus, the process now assumes a more or less quiescent course. About 50 per cent., of all infected infants at this period succumb to active tuberculous disease in one form or another, and now, as the age of the child advances, we find up to the 5th or 6th year of life only about 20 per cent. who are victims of tuberculosis, and that all children infected after the 5th year of life are seldom tuberculously diseased, and if so, that the tuberculosis at that age is simply the result of a previous or earlier infection. Further, we will often notice, at this period, a strong tendency to a less frequent involvement of the glands, but a distinct metastatic tuberculosis of other tissues and organs of the greater circulation.

We now observe the frequency of bone and joint tuberculosis, and particularly in the earlier years and up to the 6th and 7th, affecting chiefly the small bones or joints and tuberculosis of the wrist and ankle bones, the carpal and tarsal, the metacarpal, metatarsal and phalangeal, with an occasional spinal ventosa, and as the child advances towards puberty, the larger joints, the knee, ankle, shoulder and hip, all of which until now have been spared from the early involvement, are most frequently the seat of tuberculous disease.

At this period the mortality from all forms of tuberculosis seems to have lessened, the disease having now assumed a more benign form, and at the age of puberty and a little beyond, and up to about the age of 14, we find that only 2 per cent. perish from tuberculous disease. It is most interesting at this period to note that as the frequency of the infection rises the mortality decreases, and that the ratio between the tuberculosis mortality and those who are tuberculously infected is in inverse proportion. In early infancy the infection is usually estimated to be between 1 and 2 per cent. with a mortality of nearly 100, whilst at the age of 14, with a mortality of only 2 per cent., we find that the number of those who are tuberculously infected reaches more than 95 per cent., with closely corresponding figures for the years between these points.

In the middle of the second decade of life we again notice a decided change in this ever-changing tuberculosis picture. We had noticed in the beginning of the first decade that tuberculosis assumed a very acute, virulent form, more subacute toward the middle of the decade and toward the close of the first and beginning of the second a chronic or even benign form, and up to this time more or less sparing the lungs. It seems that the organs and tissues supplied by the greater circulation, and which up to this time have stood the brunt of the disease, have now acquired a certain degree of immunity, for we will notice that from now on the organ of the lesser circulation is most vunerable, and we will notice particularly that this pulmonary attack in the middle of the second decade is again, as at the beginning, most virulent, very acute and most fatal, assuming a more subacute form toward the close of the second decade and during the greater portion of the third, after which the disease again assumes a more benign or chronic form and, as compared with the pulmonary circulation now involved, during this time, all other forms of tuberculosis seem very infrequent.

While the disease in early life attacks the glands, the joints, the bones, the meninges, the skin, which in later life are infrequently attacked, the lungs, which until now have been more or less spared, are in the second decade attacked, at first, with great vigor and a little less severely as life advances, and one is now more or less impressed by the facts that no other disease is so variable in attacking different organs in the different ages and that tuberculosis of the glands is as infrequent in adult life as is pulmonary tuberculosis in child life.

If the tuberculosis mortality in early infant life is 98 per cent. or more, 50 per cent. at the age of 3, 20 per cent. at the 5th to 7th year of life and only 2 per cent. at the age of 14, then logically at the age of 15 or 16, when all are infected, it ought to zero, and it would be so, and no more deaths from tuberculosis would follow if it were not that at this period many insidious intercurrent conditions arise, which

account for the acute, subacute and chronic form of pulmonary tuberculosis which we now so frequently see after the 14th year of life. It must, however, be admitted that active pulmonary disease is occasionally encountered even before the 10th year of life, but not, as a rule. Now it may be truthfully stated here that every adult suffering from active pulmonary tuberculosis has violated some hygienic law, and is simply paying the penalty for this violation. Let us study this somewhat closely.

Intercurrent conditions, or, more properly speaking, indirect, contributory, predisposing or causative factors of pulmonary tuberculous disease, are not always noticeable in young adult life, although they very frequently exist. We all have undoubtedly observed that towards puberty, the usual conditions which prevailed in child life have changed, that a new stimulus had taken possession of the young adult, and from the school days, with romping and playing, with no responsibility, remaining out of doors the greater part of the day, we now find the young adult suddenly thrown upon his own resources, and the individual struggle for existence now takes the place of many of his former sports, and he begins to realize more from day to day his ever-increasing responsibility. If to this be added his personal appearance, which now plays a most prominent rôle, for indifference has given way to more social pleasures with its exacting tribute, and perhaps a very limited earning capacity, then all the slowly beginning factors necessary to render a quiescent tuberculous focus active are present.

And, let us add to this picture many hours of indoor confinement, breathing unwholesome, vitiated air in stuffy offices, rooms, factories or work-shops, perhaps insanitary or bad housing, then the conditions are most favorable for bringing about a pulmonary tuberculous activity, the rapidity or slowness of the disease being dependent upon the primary infection or on how much or how great an immunity or resistance the organism has in early life developed. This applies to the youth of both sexes. The lowering of body resistance by insufficient intake of good, nourishing, wholesome food in sufficient quantity, now also plays a leading part. A young lad living under such conditions, whose noon lunch consists of a piece of pie and a cup of coffee, followed by smoking a number of cigarettes, is simply courting tuberculosis, and the same applies to many of our good, but imprudent and careless young girls, who wear $10 shoes and put a 10-cent dinner into their stomachs, and perhaps in addition, persisting in wearing, in the winter months, the raiment intended for summer wear. It must not be forgotten that each and every other factor which aids in the lowering of body resistance will be a powerful contributory agency for the development of an active tuberculous process from a larval, and in the greater number of cases of active tuberculous disease we can trace back the onset of the malady. If to the bad housing, poor ventilation of offices, work-shops, homes, stores or living quarters be added excesses of all kinds, like the immoderate use of alcoholic beverages, excesses in eating or much carousing, insufficient rest and sleep, exciting sports, prolonged nervous excitability, nervous shock incident to accidents of all kinds; or, perhaps, the effect of various acute diseases which lower vitality, like measles, scarlet fever, pneumonia, typhoid fever, malaria, etc., as well as prolonged operations with or without much loss of blood, then everything is most propitious for the creating of an active tuberculous process, chiefly pulmonary, from a quiescent, latent or inactive one.

All this we notice most frequently in the second decade of life, but with the beginning of the third these causative factors appear more or less in the background, and other equally important ones seem to be in the lead, and whilst in the second decade the disease was more acute, it now assumes a more subacute form, which nevertheless leads equally to a fatal termination. In this, the third decade, we most frequently find, in families particularly, a strong tendency to get along in life, and the buying of a home, the saving of money to educate the children, the greater demands of society, the putting of the best foot forward now predominate, and the effects of overwork, overstudy, long hours with insufficient rest, saving on food intake or on the necessaries of life now demand their victims. At this period we will notice occasionally the baneful effect of having led a vicious life, all of which is still more noticeable in the fourth decade, when the chronic alcoholic, the spendthrift, the vicious and the low are now paying the penalty in the

long drawn out chronic form of pulmonary tuberculosis, lasting, in many instances, many, many years, and during all this time being the most prolific source for the spreading and propagation of tuberculosis. Indeed, it may be stated without reserve that the so-called reformed alcoholic, suffering from a chronic cough, usually referred to as asthmatic or bronchitic is, above all, one of the greatest infectors of mankind, because, having free access to the homes of his friends and relatives, usually fondling the infants and small children of the household, makes him most particularly dangerous to the community.

SUMMARIZING.

We have noticed from what has been said that tuberculosis in very early life runs a very acute, a very malignant course, assuming a more subacute form in the middle of child life and towards puberty becoming more chronic and more benign; and that the involvement of the organs and tissues of the greater circulation, which up to this period were most vulnerable, seems to be less so now. The organs of the lesser circulation, the lungs, in the second decade, are chiefly affected, and in this involvement it assumes now, as in the beginning of the first, a very acute malignant form, but now pulmonary; toward and during the third decade the subacute; in the fourth and after that the chronic, or again a more benign form, then again we find that late in life it may occasionally assume the acute form, hence we must acknowledge that tuberculosis is a chronic infection, accompanying the infected individual from infancy or early child life until death or old age, and at any time during all these years may assume either an acute, subacute or chronic manifestation of the disease, excluding during all the years no tissue or organ of the human body, having in the earlier years a special predilection for the organs of the greater circulation, in young adult life a decided preference for the organ of the lesser circulation, the lungs, and whereas in the earlier infection there is a strong tendency to a metastatic manifestation of the disease through the lymph and blood stream, lymphogenous and hematogenous, manifested in tuberculosis of the glands, meninges, bones, joints, etc., this in tuberculosis of the lungs giving way to immediate reinfection and spreading of the disease by direct contact with the secretions flowing from the bronchial tubes, we now find tuberculosis of the larynx, tuberculosis of the abdominal organs from tubercle bacilli, which find their way from the ingested, bacilli-laden sputum, passing down from the stomach into the intestinal tract and into the other abdominal organs and glands. It should be mentioned here that abdominal tuberculosis, so frequently seen in children and manifested by tuberculous peritonitis, intestinal gland tuberculosis is not of this form, is not the result of human bacillary infection, but usually the effect of the ingestion of milk from tuberculous cows, containing the bovine bacilli.

With our present knowledge concerning this disorder, we may deduct the following *tuberculosis truisms.*

1. If v. Behring's axiom; "Manifest pulmonary tuberculosis in the adult is only the end of the song which was first chirped at the cradle" —can be accepted as true, then it may be worded more clearly that the active pulmonary tuberculous adult simply completes the chain or cycle of the disease which began in infancy, and who now too often carelessly spreads in many directions the seeds of numerous beginning chains or cycles, and which are now fostered in each newly infected individual, again to begin chiefly after puberty, to complete the new cycle, and making in this way from the starting point innumerable endless chains.

2. If the adult suffering from active pulmonary tuberculosis is simply paying the penalty for having violated some fixed and definite hygienic law, then it is within the province of every primarily infected individual (and that includes nearly every human being) to avoid this violation, and after the age of puberty to guard against manifest tuberculous disease, to keep his infection quiescent and to enjoy at all times the privileges of perfect health.

3. If in early life we must guard infants and small children from tuberculous infection by not exposing them to the presence of the active tuberculous adult, or, in other words, institute prophylactic measures against a tuberculous exposure, then in young adult and middle life it will become necessary to limit the tendency, the contributing factors; in other words, the disposition to the disease, and suitable prophylactic measures against a tuberculous disposition must be maintained.

25 E. Washington St.

ILLINOIS MEDICAL JOURNAL

Published monthly by The Illinois State Medical Society, under the direction of the Publication Committee of the Council.

GENERAL OFFICERS, 1917-18

PRESIDENT.....E. B COOLLEY, Danville
PRESIDENT-ELECT.....E. W. FIEGENBAUM, Edwardsville
FIRST VICE-PRESIDENT.....E. P. SLOAN, Bloomington
SECOND VICE-PRESIDENT.....SADIE BAY ADAIR, Chicago
TREASURER.....A. J. MARKLEY, Belvidere
SECRETARY.....W. H. GILMORE, Mt. Vernon
(Ex-officio Clerk of the Council)

THE COUNCIL

District 1—EMIL WINDMUELLER, Woodstock.
District 2—EDWIN S. GILLESPIE, Wenona.
District 3—CLYDE D. PENCE, Chicago.
District 5—C. S. NELSON, Springfield.
District 6—C. D. CENTER, Quincy.
District 7—C. F. BURKHARDT, Effingham.
District 8—C. E. PRICE, Robinson.
District 9—FRANK C. SIBLEY, Carmi.
CLYDE D. PENCE, *Chairman*, 8338 Ogden Avenue.

Send original articles and all communications relating to advertisements and mailing list to Dr. Clyde D. Pence, Editor, 8338 Ogden Avenue.

Membership correspondence to Dr. W. H. Gilmore, Mt. Vernon, Ill.

Society proceedings and news items to Dr. Henry G. Ohls, *Managing Editor*, 927 Lawrence Avenue, Chicago.

Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

MEDICO-LEGAL COMMITTEE

ANDY HALL.....Mt. Vernon
WILLIAM O. KROHN.....Chicago
GEORGE STACY.....Jacksonville
D. R. MACMARTIN.....Chicago
C. B KING, *Chairman*.....8338 Jackson Blvd., Chicago
THOMAS D. CANTRELL, *Secretary*.....Bloomington

GENERAL COUNSEL

ROBERT J. FOLONIE.....39 S. La Salle Street, Chicago

State society will pay no bills for legal services except those contracted by the committee. Notify the Chairman at once. Don't employ attorneys

DECEMBER, 1917

Editorials

THE JOURNAL WISHES ALL ITS READERS A MERRY CHRISTMAS AND A HAPPY NEW YEAR

JOIN THE AMERICAN RED CROSS TODAY

AMERICAN RED CROSS

The first semi-annual report of the Red Cross, together with a report by the War Council of appropriations and activities from the outbreak of the war, is out. It is scarcely necessary to describe the aims of this organization, but briefly they are:

1. To be ready to care for our soldiers and sailors on duty wherever and whenever that care may be needed.

2. To shorten the war—by strengthening the morale of the allied peoples and their armies, by alleviating their sufferings in the period which must elapse until the American army can become fully effective abroad.

3. To lay foundations for an enduring peace—by extending a message of practical relief and sympathy to the civilian population among our allies, carrying to them the expression of the finest side of the American character.

The report is, of course, too lengthy to reproduce here in full, but we wish everyone could read it. The appropriations and donations have been large—in one sense, generous—but they have not been half large enough. We firmly believe in doing anything which may lessen the sufferings of wounded soldiers or starving, destitute women and children.

Possibly the Red Cross cannot make a dollar do as much in Europe, as an individual could make it do here—there must be expenses of administration—but we have the positive assurance that it is being used to the best possible advantage.

THE RED CROSS SALARY LIST

At National Headquarters in Washington a staff has been built up which included, on November 1, 1917, sixty-three officials, most of them business men and women of great experience in large affairs, who are working without payment of either salary or living expenses.

Numerous others are either giving their time or are working for nominal pay. The membership has grown, since the war, from about 200,000 to more than 5,000,000. The salary list has been reduced since last July from about 700 to about 425. Salaries have decreased also in average amount. Had the Red Cross been obliged to pay salaries to all the heads of departments at National Headquarters the present organization would have been impossible.

The Association has done much, is devoting all resources possible to our armies and to relieve suffering and starvation wherever found, but it must do still more. It must increase both its strength and its resources. Our soldiers must be given all the care we can give them; and cer-

tainly we cannot see maimed children starving without doing our utmost to help them.

It has been the custom of people of all countries to observe the celebration of Christmas by giving presents—most frequently to those not needing them specially—and in giving useless remembrances. In the United States the total of Christmas celebration amounts to millions of dollars. This is all well—we believe it should be so, usually—but for this year, and while such suffering exists, would it not be much better to devote much of this money usually spent at Christmas time to the causes of humanity? Will it work a hardship for your family to have a very simple and inexpensive Christmas celebration, and will not your family feel better and more like they had fittingly celebrated the nativity, if they donate this Christmas money to the relief of suffering in Europe? We would appeal to all our readers to render all support to the Red Cross.

MEDICAL PIONEERS OF KENTUCKY.

The November issue of the Kentucky Medical Journal is a history of early medicine of Kentucky. The entire number, 172 pages, is given to historical data of those Kentuckians who not only were the medical men of Kentucky, but many of whom helped make medical history for the world. Very appropriately the volume begins with a biographical sketch of Dr. Ephraim McDowell.

We congratulate the editor upon the production of this number. It has required an immense amount of painstaking labor to secure biographers who would and could get this history in form. Every Society member should procure a copy of this journal. He will be able to while away many evening hours in the reading of it and contemplation of the wonderful work done by some of these men—work done under circumstances which would now be considered impossible. It is to be regretted that each state in the Union cannot have some one write up its medical history.

RESOLUTION ADOPTED UNANIMOUSLY BY THE CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA AT CHICAGO, OCTOBER 25, 1917.

WHEREAS, The experiences of the nation convinces us of the necessity for Universal Military Training, to furnish qualified men for defense, to strengthen manhood and mental poise, and to make for a more efficient citizenship, and

WHEREAS, We believe it will democratize youth and furnish discipline, while developing physical force and endurance, and will produce better fathers and workers for the ranks of peace; therefore be it

Resolved, That the Clinical Congress of Surgeons at its eighth annual session urges upon Congress as its coming session the passage of a measure along the general lines of the Chamberlain Bill for Universal Military Training, and that the cantonments now used by the National Army be utilized, if possible, for such work.

ACTION OF THE STATE COMMITTEES OF THE MEDICAL SECTION, COUNCIL OF NATIONAL DEFENSE

URGING IMMEDIATE ACTION PROVIDING FOR AT LEAST SIX MONTHS OF INTENSIVE MILITARY TRAINING OF ALL YOUNG MEN IN THEIR NINETEENTH YEAR, TO BECOME OPERATIVE AS SOON AS THE ARMY CANTONMENTS ARE AVAILABLE; ALSO RECOMMENDING PHYSICAL TRAINING IN SCHOOLS, ETC.

The following resolutions were adopted unanimously at a meeting of Committees from all states (except Maine and Delaware) held in the Congress Hotel, Chicago, October 23, 1917:

WHEREAS, The experience through which the United States is now passing should convince every thoughtful person of the necessity for the universal training of young men, not only for the national defense in case of need, but also to develop the nation's greatest asset—its young manhood—in physical strength, in mental alertness, and in respect for the obligations of citizenship essential in a democracy; therefore be it

Resolved, By the State Committee of the Medical Sections of the Council of National Defense that they strongly urge the adoption by our government at this time of a comprehensive plan of intensive military training of young men for a period of at least six months, upon arriving at the age of nineteen years; and that this body also support the movement to secure the introduction into public schools of adequate physical training and instruction;

Resolved, That the members of each State Committee immediately take active steps to in-

sure public support for the subject of these resolutions through the newspapers, through public meetings and through the appointment of committees in each county; also that copies of these resolutions be forwarded to the Senators and Members of Congress in their respective states, with a personal request that favorable action be taken at the coming session of Congress upon a measure following the principle of the Chamberlain bill and to become operative as soon as the army cantonments are no longer required for the training of the forces in the present war;

Resolved, That each State Committee from time to time report to the Medical Section of the Council of National Defense as to action taken and progress secured in their several states.

THREE FIRMS LICENSED TO MAKE DRUG PATENTED IN GERMANY

The Federal Trade Commission has authorized the following:

The Federal Trade Commission today entered orders for licenses to three firms to manufacture and sell the product heretofore known under the trade names of "Salvarsan," "606," "Arsenobenzol," "Arsaminol," patent rights which have been held by German subjects. The orders for licenses are subject to acceptance and agreement by the licensees to the stipulations made by the commission. Upon such acceptance and agreement lilenses Nos. 1, 2, and 3 will lbe lfolrmlaly granted by Secretary L. L. Bracken, acting for the commission.

Hereafter this important drug will be manufactured and sold under the name of "Arsphenamine."

AUTHORITY FOR ACTION.

The Trade Commission's action was taken under section 10 of the trading with the enemy act, under direction of Commissioner Fort, upon recommendation of C. H. McDonald, Edward S. Rogers, and Francis Phelps, in charge of granting such licenses. The Public Health Service has prepared rules and standards for the manufacture and testing of "Arsphenamine," and will supervise its manufacture, authority having been conferred on the Public Health Service by the Secretary of the Treasury, and the observance of the rules and standards become a condition of the license.

The three firms which will be hereby permitted to manufacture and sell "Arsphenamine" are Dermatological Research Laboratories, of Philadelphia; Takamine Laboratory (Inc.), of New York; and Farbwerke Hoechst Co. (Herman A. Metz Laboratory), of New York. The original patent for manufacture of what has heretofore been known as "Salvarsan," etc., was issued to Paul Ehrlich and Alfred Bertheim, German subjects, and assigned to Farbwerke Vormals Meister, Lucius and Bruning, of Hoechst on the Main, Germany.

The supply of the drug now licensed to be made in America, up to 1915, was almost exclusively obtained by importation from Germany. It is at present the only known specific for virulent blood poison. From the outbreak of the war importation became more difficult.

PRICE OF DRUG.

Before the war began the patented drug was sold at $4 per dose, which is approximately $3,500 per pound, and speculatively it has brought as high as $35 per dose. While the price of the product is not fixed at this time by the commission, the right to fix prices is retained, and a price of $1 per dose to the Army and Navy, $1.25 per dose for hospitals, and $1.50 per dose for physicians are the prices at which some, at least, of the licensees have stated that they intend to offer the licensed drug.

The enormous shortage of supply of this important product will immediately be relieved, and the article placed in the hands of the Government, the hospitals, and the medical profession at a price lower than ever before.

Official Bulletin, November 30, 1917.

ANNOUNCEMENT TO PHYSICIANS, PUBLIC HEALTH AND SOCIAL WORKERS OF THE UNITED STATES AND CANADA

The Metropolitan Life Insurance Company invites physicians, public health and social workers to make use of its valuable collection of mortality statistics.

These statistics present the principal causes of death among white and colored wage-earners in the United States and Canada. The material covers over ten million individuals for each of the six years, 1911 to 1916. Death rates are available for each race, by sex and by age period.

The Company hopes in this way to aid in the study of disease and disability among wage-earners. It desires to stimulate medical investigation and research. By offering these statistics to the medical profession and to public health and social workers, the Company expresses also its appreciation of the co-operation which it has received from physicians and others who have replied to inquiries and have given detailed information in thousands of cases. This assistance has helped to make the statistics more accurate and valuable.

All inquiries should be addressed to Statistical Bureau, Metropolitan Life Insurance Company, One Madison Avenue, New York City.

WAR PRICES DEPRIVING BABIES OF MILK.

Washington, Dec. 4.—Decreases reported from New York and Chicago and New England cities in the amount of milk being now consumed by families with young children have led the Federal Children's Bureau to emphasize its imperative necessity in the diet of babies and young children.

Dr. Grace L. Meigs, the director of the Bureau's Child Hygiene Division, in commenting on the danger of such a decrease to the health of children today, said, "Milk is the one food that all young children must have if they are to be strong and healthy. Whole milk is rich in the elements without which the child's growth ceases and his health is impaired; indeed there is no food which can supply as well the needs of the growing child.

"There is no substitute for milk in the diet of babies and young children. Yet the increase in its price is so startling that, as the reports the Bureau receives show, many mothers are economizing on milk. Young children can not get the nourishment they require from the would-be milk substitutes given them. Patent foods which do not themselves contain milk and are not intended to be mixed with milk are so lacking in the essentials of healthy development that we must expect children fed on them instead of on milk to be weakly and ailing. Plainly very great harm is done young children by giving them tea and coffee to take the place of milk which is really a complete food; it is giving them mere stimulants to replace their best food."

Since the price of milk went up to 14 cents a quart, tea and coffee have been substituted for milk by more than half of the 2,200 families—all with children under six—included in the study of the effect of the increased price of milk just made in New York City by the mayor's Committee on Milk, the City Department of Health and the Association for improving the Condition of the Poor. One hundred and twenty families have stopped taking milk entirely, in 25 of these there are babies under one year old. All the 2,200 families have young children, but nearly half are taking from one-fourth to one-half less milk than before the price went up. Yet even before the larger price decreased the amount of milk they bought these families were getting but little more than half the amount of milk which experts on children's diets say they need.

In Chicago as well as New York the rise in the price of milk has forced down the amount purchased. A dealer there reports that while he distributed on an average 4,000 quarts of milk a day in September, on October 3 with the price increased, he distributed only 2,500 quarts.

In New Haven, Bridgeport and other Connecticut towns milk delivered at the station is sold wholesale at 8 cents a quart. It retails as high as 15 cents a quart. In Waterbury, when the price was raised from 12 to 15 cents a quart the sale was so greatly reduced that the price has been dropped back to 14 cents.

THE AMERICAN REVIEW OF TUBERCULOSIS.

Within nine months the *American Review of Tuberculosis* has made for itself a unique place in medical circles throughout the United States and in almost all parts of the world. Few specialized journals have received a more cordial welcome than this one has, as evidenced by its rapidly increasing subscription list. The large number of medical men who are interested in the treatment and prevention of tuberculosis gives the *Review* an unusually extensive field.

The American Review of Tuberculosis, however, has an appeal also to those who are not directly interested in this disease, that is to the internists, to the laboratory men, and even to the surgeons who are specializing in related fields. Tuberculosis has many ramifications and is so intimately bound up with the practice of all physicians that this journal should find a ready place in the library of every man who wishes to keep himself posted for his own best interests and those of his patients.

The Review aims to be not only a clearing house for the best American thought and production in relation to the clinical, pathological and sociological phases of tuberculosis, but it aims at the same time to stimulate renewed interest on the part of those who are already working in this field and to arouse interest on the part of the general practitioners to whom tuberculosis does not make a very ready appeal. It is not a propaganda journal but it does frankly aim to be educational, as every good medical journal should do.

Its editorial staff, headed by so well-known an authority as Dr. Edward R. Baldwin of Saranac Lake, for so long an associate of Dr. Trudeau, and containing the names of men of such national and international prominence as Dr. Lawrason Brown, Saranac Lake, N. Y.; Dr. H. R. M. Landis, Philadelphia, Pa.; Dr. Paul Lewis, Philadelphia, Pa.; Dr. M. J. Rosenau, Boston, Mass.; Dr. Henry Sewall, Denver, Colo.; Dr. B. S. Veeder, St. Louis, Mo., and Dr. Allen K. Krause, Baltimore, Md., assures those who subscribe to this publication an unusually high grade of material. The further fact that the journal is published by the National Association for the Study and Prevention of Tuberculosis vouches for its standing and gives added assurance to its future.

The banking of the National Association for the Study and Prevention of Tuberculosis also makes it possible for the publishers to furnish the *Review*

at so moderate a price as $3.00, which, to those who know anything about the cost of production of such publications, will readily appear as less than the cost of production. We are glad to recommend *The American Review of Tuberculosis* to our readers and urge them to add it to their subscription lists. Subscriptions should be sent to the New York office at 105 East 22nd Street, New York City.

Correspondence

MEDICAL RESERVE CORPS

November 11, 1917.

MEMORANDUM: To the Editors of Medical Journals in the United States.

It is of the utmost importance that the medical profession throughout the country be kept informed in regard to the activities of the Surgeon General's Office, the Medical Section of the Nation Council of Defense in Washington, and the work of the State Committee.

There should be no difficulty in getting this information by writing directly for it.

The inclosed reprint gives specific and authentic information up to September, 1917.

Since then the situation of the Medical Reserve Corps in regard to numbers has become less acute. About 14,000 are commissioned and 7,000 are in the process of being commissioned.

Twenty-one thousand medical officers are sufficient for an army of 2,000,000 men.

The indications are that we will need a much larger army, and the medical profession of this country will be tested to its utmost capacity.

At a recent meeting in Chicago of the State Committee of National Defense it was decided to petition Congress to create a Reserve Medical Officers' Reserve Corps. When this is created every qualified physician at any age will be given the opportunity and honor to volunteer his services and be enrolled. After this every physician will be in a position either wear the insignia of the Reserve Medical Officers' Reserve Corps, or the uniform of active service in the Medical Officers' Reserve Corps.

From the new Reserve Medical Officers' Reserve Corps the Surgeon General will be able to select medical officers as they are required for service in France or at home.

The present great problems are:

The training of physicians in civil practice for military duty.

The protection of the army in training in this country from venereal disease.

The future great problems when our wounded begin to return to this country will be the reconstruction and re-education of the crippled soldiers.

The great and only necessity of the present is the successful carrying on of this war.

The medical journals should do all in their power to keep the profession properly informed and to stimulate them for this great endavor.

JOSEPH COLT BLOODGOOD,
Chairman of Committee on Preparedness of the Southern Medical Association.

Public Health

RULES AND REGULATIONS FOR THE CONTROL OF VENEREAL DISEASES.

The State Department of Public Health has promulgated rules and regulations for the control of venereal diseases in force throughout the State on and after November 1st, 1917, with the provision of a fine of not more than $200.00 or imprisonment in the county jail not exceeding six months, or both, for each offense in the violation of such rules.

It is encumbent upon the local health officer to carry out the provisions of these rules and regulations and those local officials who fail in the performance of their duty subject themselves to the fines and penalties prescribed.

The regulations require that everp physician, nurse, attendant, hospital or dispensary superindendent, druggist, or any other person having knowledge of a known or suspected case of venereal diseases must immediately report the same to the local health authorities on a form or blank specified for that purpose. This form includes information as to the name, attendant, sex, color, age, and civil state of the individual, his place of residence, occupation, and employer, with specific information as to whether he is engaged in the handling of foods. The blank also provides for information as to the probable source of infection, the probable date of infection, and other known cases of infection acquired from the same source.

Under certain conditions the name of the patient, the address of the patient and the exact identification of the source of infection, may be omitted and a "key number" may be employed in place of the patient's name. These exceptions are: (a) that the patient is of good repute in his community; (b) regularly under the care of a reputable physician; (c) that the physician give the patient full instructions to be taken to prevent the

spreading of the infection and supply him with literature on the subject published or approved by the State Department of Public Health; (d) that the patient gives assurance of observance of all precautions, and (e) that the physician assumes the responsibility for the observance of all rules. In case the patient is in military or naval service, his name may be omitted, under the above conditions, provided the military medical officer of his command has been advised of the name of the patient and the character of his illness. Under the foregoing conditions the street address and the name and address of the employer may likewise be omitted in the report.

Immediately upon receiving the report of a venereal disease (defined in these rules as syphilis in the infectious stages, gonococcus, infection or chancroid), the health officer must notify the State Department of Health, and the military authorities provided the patient is in military service. The reports of these cases shall be treated by the local health officer and by the State Department of Public Health as confidential information so far as this may be consistent with the public health.

Whenever a case of venereal disease is found on premises used for immoral purposes or upon premises where the patient cannot be properly isolated and when the patient will not consent to removal to a hospital, the premises are to be placarded as in the manner employed in other communicable diseases.

All infected persons are prohibited from exposing others to infection. Visitors are not permitted to enter placarded premises and the infected individual is forbidden to leave such premises except with the consent of the local or state health authorities.

In those cases in which the correct name and address of the patient are not given, the physician assumes the responsibility for proper control of the case, and when a physician has cause to believe that the patient is violating the rules made for the protection of others, he will immediately notify the local health officer as to the name and address of the infected person.

The period of control of venereal diseases shall continue, in case of gonococcic infection, until at least two successive smears taken not less than forty-eight hours apart, fail to show gonococci; in case of syphilis, until all lesions of the skin or mucous membranes are all healed; in case of chancroid, until all lesions are healed.

It is strongly urged that all patients suffering from venereal diseases shall be removed to hospitals for treatment.

Any person suffering from venereal disease is prohibited from moving out of one health jurisdiction into another without first securing permission from the local health authorities of the community to which he desires to be removed or from the State Department of Public Health, and such permission will be granted only on condition that (1) the object of removal shall be deemed urgent and legitimate; (2) that such removal can be made without endangering the health of others; (3) the patient agrees to place himself under the care of a reputable physician to be named in the removal permit, such physician to assume the responsibility of the care of the case, and (4) removal not to take place under twenty-four hours after notice has been sent by mail to the health officer at the proposed destination.

On receiving a patient thus transferred from another locality, the attendant physician is required to file a report of the case on the form used for the original report.

Persons suffering from venereal diseases are prohibited from engaging in the handling of foods, the nursing of children, or of the sick, or from employment where they may expose others to infection.

It is made the duty of the local health officer to ascertain the existence of infectious venereal diseases; to investigate all cases not under the care of reputable physicians and those cases which are nonreported and to ascertain the source of infection. The health officer shall use all lawful means to cause the examination of persons reasonably suspected of being infective and all prostitutes are presumed to be suspected cases.

The State Department of Public Health offers its laboratory service without charge, for the diagnosis of venereal diseases and further offers to furnish advice and counsel, by mail only, without cost. Persons are advised to secure prompt diagnosis and satisfactory treatment and are warned against medical quacks, patent medicines, druggists' prescriptions, etc.

Copies of the rules and regulations for the control of venereal diseases may now be had on application, while a circular of general information on the prevention and suppression of venereal diseases is in press and will be ready for distribution within a very few days.

NEW REGULATION ON DISTRIBUTION OF ANTITOXIN AND OTHER PREVENTIVE AND CURATIVE AGENTS.

On account of the urgent necessity for protecting the military forces in the several camps and cantonments in Illinois, the State Department of Public Health has used every effort to encourage morbidity and mortality reports and to enforce the laws and rules relative to such reports.

For the most part, the physicians of Illinois have complied cheerfully with the rules and regulations relative to the reporting of communicable diseases and the state law for the registration of births and deaths, and the vast majority have been quick to appreciate the tremendous importance of thor-

oughly efficient health regulations during the time of preparation for war. In certain sections and in certain isolated cases, however, the efficiency of the State Department of Public Health has been impeded through the incompleteness of Vital Statistics and both the civil and military population have been unnecessarily endangered through failure to report contagious and infectious diseases.

Partly as a war time measure, the State Department of Health has made the following ruling relative to the distribution of antoxin vaccines and other preventive and curative agents, effective in Illinois December 1st:

"After December 1, 1917, the free distribution of diphtheria antitoxin, antityphoid vaccine and other vaccines and sera will be confined to those physicians who promptly and fully comply with the law requiring reports of births and deaths and with the state rules and regulations for the control of communicable diseases, including the prompt reporting of all such diseases to local health authorities.

"Failure on the part of any physician to report the births, deaths, and communicable diseases occurring in his or her practice, or to enforce quarantine in accordance with the state requirements, will result in the issuance of instructions to all state distributing agents prohibiting further deliveries of free state antitoxin and other prophylactic agents to the offending parties."

This rule has been under consideration for some time and has received the approval and commendation of a large number of the more active health officers and prominent members of the medical profession.

STATE CLINICS AND AFTER-CARE OF POLIOMYELITIS

Several clinics have been established within the past few weeks in various sections of the state for the after-care of victims of anterio poliomyelitis. These clinics are under the direction of Dr. C. W. East, of the staff of the Department of Health, and the nursing service is under the direction of the Division of Child Hygiene and Public Health Nursing. The clinic at St. John's Hospital, Springfield, which was opened some months ago, will be continued and will receive patients on Thursday of each week. A new clinic has been established at Chicago Heights, receiving patients every other Friday, beginning November 30th, with a clinic at Ottawa to be open every other Monday, beginning December 3d. Additional clinics will be opened at Moline, Rock Island, and Oregon and physicians of these localities are invited to utilize the services of these dispensaries and to refer their patients to them.

It is not the purpose of the State Department of Health to undertake the treatment of patients except with the assistance of attending physicians.

Something over a thousand children suffering from the after-effects of infantile paralysis have been received up to this time at the Springfield clinic and at the clinic meetings held in conjunction with the various county medical societies.

INCREASE IN WORK OF STATE DIAGNOSTIC LABORATORY

The reorganization of the State Department of Public Health under the Civil Administrative Code and the general impetus given to public health work throughout the state within the past six months, has brought about a large increase in every phase of the work of the State Diagnostic Laboratory at Springfield and in the branch laboratories located in several sections of the state. During October and November of 1916 the laboratory at Springfield examined the following number of specimens: October, tuberculosis 192, diphtheria 289, typhoid 135, total 616; November, tuberculosis 178, diphtheria 248, typhoid 94, total 520. During October, 1917, these numbers had increased to tuberculosis 245, diphtheria 947, typhoid 118, paratyphoid A. 89, Paratyphoid B. 89, total 1,488. While November, 1917, the work of the laboratory was greater than at any time in the history of that organization, and the following numbers of specimens were examined: Tuberculosis 204, diphtheria 1,268, typhoid 99, paratyphoid A. 99, paratyphoid B. 99, total 1,769.

In addition to the general increase in the amount of work along the lines formerly covered by the laboratory, as there has been added activity on account of the many phases of diagnostic work undertaken within the past few weeks.

The laboratory formerly confined itself to the examination of specimens from cases presumed to be those of tuberculosis, typhoid fever, diphtheria, and malaria with Wassermann tests for those persons unable to pay for same. At the present time the laboratory has extended its service to the diagnosis of rabies, the examination of sections from tumors, the diagnosis of all cases of venereal diseases where a full history accompanies the specimen (although it is not necessary that the name or address of the patient be made a matter of laboratory record). Under a new rule all typhoid specimens are carried through the tests for paratyphoid A. and B.

TUBERCULOSIS DISCUSSED IN DOWNSTATE CLINICAL CONFERENCE

Perhaps one of the most significant meetings held in Illinois in recent years was that which took the form of a clinical conference on tuberculosis in Springfield on November 22, 23 and 24.

The meeting was held under the auspices of the State Council of Defense, the State Department of Public Health and the Illinois Tuberculosis Asso-

ciation. Medical health officers, physicians and others interested from counties in central and southern Illinois attended. About thirty counties were represented. The conference was the first of a series which eventually will be aimed to serve the entire state.

The clinical sessions were under the direction of Dr. O. W. McMichael and Dr. Ethan Allen Gray of Chicago, and Dr. George Thomas Palmer of Springfield.

County representatives present expressed and manifested keen interest in the clinical sessions. The discussions hinged on the following general topics: "Essentials of Early Diagnosis," "Local Agencies to Combat Tuberculosis," "Tuberculin in Diagnosis of Tuberculosis," "Diagnosis and Treatment of Tuberculosis," "The Case History in Early Diagnosis," "The Tuberculosis War Problem in the Military and Civil Population," "The X-Ray in the Diagnosis of Pulmonary Tuberculosis," "Tuberculosis of Bones and Joints," "Management of the Tuberculous Patient," "Living Out of Doors," "Diagnostic Methods," "Financing Community Tuberculosis Work," "Dispensary Methods for the Smaller Community," "Local Community Problems," "Summarizing Diagnostic and Dispensary Methods," "Laboratory Methods in Tuberculosis."

The clinical facilities at Springfield were excellent. The general work in early diagnosis being carried out at the Springfield Tuberculosis Dispensary; x-ray work and tuberculosis of bones and joints at St. John's Hospital; bedside care and management of the out-of-door patient at the Springfield Open Air Colony and laboratory methods in the diagnostic laboratories of the State Department of Public Health.

COMMUNICABLE DISEASES IN ILLINOIS

Reports which the State Department of Public Health have compiled for the three weeks of November ending the 10th, 17th, and 24th respectively, show, in a general way, a decreasing number of new cases of communicable diseases within the state. They also indicate, unfortunately, that reports of communicable diseases at the present time are not as complete as they should be.

Outside of the City of Chicago, new cases of chickenpox reported during the three weeks number 131, 112 and 110. Reported cases of diphtheria were 29, 32 and 34 for the three weeks. Measles show a decided increase during the week ending November 24th, due, to a certain extent, to an epidemic of that disease in Greene county. Scarlet fever has shown a steady decline and whooping cough, which reached a high point during the second week of November, decreased decidedly toward the end of the month.

Within the past two weeks the following unusual prevalence of communicable diseases was noted: Gibson City, typhoid fever, 15; Avon, smallpox, 25; Lewistown, scarlet fever, 13; Oglesby, diphtheria, 10; Pearl and vicinity, smallpox, 9; Percy, smallpox, 9.

Society Proceedings

ALEXANDER COUNTY

After the presentation and discussion of several interesting cases, at the regular meeting, November 15, of the Alexander County Medical Society, at the Association of Commerce rooms, Dr. Samuel Dodds read the paper of the evening, on "The Prevention of Tuberculosis from a Doctor's Standpoint." The discussion on the paper was opened by Drs. R. E. Barrows and W. H. Fields.

Acting on a request from the State Board of Health, the following committee was appointed by the president of the society, to form a committee on "Tuberculosis as a War Problem." The committee will consist of Dr. Dodds as chairman and medical director. Others besides the physicians will be asked to serve on this committee and it will co-operate with a like committee from the state at large in taking care of the problems in tuberculosis growing out of the war. Ten members were present at the meeting.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Meeting October 10, 1917

Demonstration of Clinical Cases (Illustrated with Lantern Slides), John F. Golden.

Discussion, D. N. Eisendrath and Nelson M. Percy.

"Some Observations on Military Surgery During One Year on the British Front," E. B. Neff.

Discussion, D. F. Hayes and J. G. O'Malley.

Meeting October 17, 1917

"Adenomyoma of the Recto-Vaginal Septum," Thomas S. Cullen, Baltimore, Md.

Discussion, Emil Ries.

"Some Medical and Surgical Problems of Prophylaxis in Eclampsia," W. H. Condit, Minneapolis, Minn.

Discussion, C. S. Bacon.

"Remarks on the Treatment of Cavernous and Plexiform Angioma," Francis Reder, St. Louis, Mo.

Discussion, A. E. Halstead.

Meeting October 31, 1917

"The Treatment of Internal Hemorrhoids," Chas. J. Drueck.

Discussion, J. Rawson Pennington.

"A Study of Anesthesia in Pregnancy and Labor" (Illustrated with Lantern Slides), C. Henry Davis.

Discussion, R. R. Ferguson and Bertha Van Hoosen.

"The Use of Quinin and Urea Injection in Goiter," Leigh F. Watson.

General discussion.

Meeting November 7, 1917

"Muscu'ar Atrophy in Nerve Lesions, Demonstration of Animals," Herman Campbell Stevens.

Discussion, Dean Lewis and Hugh T. Patrick.

"Clinical Manifestations of Disease of the Gall Bladder; Review of 1,000 Operatively Demonstrated Instances," Frank Smithies.

Discussion, Milton M. Portis and Bertram Sippy.

"Are Our Present Methods of Combating Pulmonary Tuberculosis Equal to the Task?" J. L. Jacque.

Discussion, Harry Kahn.

Meeting November 14, 1917

Radium—(a) "Therapeutics," C. W. Hanford; (b) "Physics," Edwin Leman, Ph. D.

Discussion, Filip Kreissl and C. L. Best, Freeport, Ill.

"A Sutûreless Skin Sliding Method for the Radical Treatment of Lung Abscess and Chronic Osteomyelitis," Emil Beck.

Discussion, E. Wyllys Andrews and L. L. McArthur.

Meeting November 21, 1917

"Are Our Present Methods of Combating Pulmonary Tuberculosis Equal to the Task?" J. L. Jacque.

Discussion, Harry Kahn.

"The Present Status of Abdominal Cesarean Section," Irving F. Stein.

Discussion, Rudolph Holmes.

"Bilateral and Recurring Ectopic Pregnancies," Aime Paul Heineck.

Discussion, Carl Beck and Emil Ries.

Meeting November 28, 1917

"The Diagnosis of Bronchiectasis, Lung Abscess and Allied Conditions" (Illustrated with Lantern Slides), C. P. Howard, Iowa City, Iowa.

Discussion, Robert Babcock, S. R. Slaymaker, E. Wyllys Andrews, Stanton Friedberg, John Ritter and M. J. Hubeny.

CHICAGO LARYNGOLOGICAL AND OCTOLOGICAL SOCIETY.

Meeting of May 22, 1917, Continued

SUSPENSION LARYNGOSCOPHY

The apparatus employed is very simple and the instruments few. An ordinary surgical table that can be raised and lowered is suitable for attachment of the crane. They find the crane which was first devised by Killian perfectly satisfactory. For work on the epiglottis, Dr. Pollock suggested a spatula in which the tip is cut out in a crescent shape, the points reaching well toward the pyriform fossæ, thus allowing the center portion to be free and permitting direct approach to the epiglottis and the center of the base of the tongue. A Cordes punch biting forceps, with its several sized tips, a Killian alligator bronchoscopic forceps, a long-handled curet, and a few applicators for wiping away the little oozing, completes their list of instruments. The most frequent use of the instruments is for examination and removal of microscopic specimens in suspected malignant disease.

Owing to the fact that carcinoma cells are sometimes implanted in neighboring healthy tissue by cutting or snaring away some of the tumor, Bloodgood has recently called attention to a method of using a cautery needle by which he surrounds the specimen to be removed, believing that he thus prevents such implantation. As it is impossible to use this needle in the epilarynx, Dr. Pollock suggested an especially long-handled cautery knife, with which he cauterizes an area completely around the specimen to be removed, thus obviating the danger of implantation. This danger is not so great in the interior of the larynx, owing to the fact that it is within a cartilage box.

As to the non-malignant growths, it is a very easy matter to remove the tumor which presents itself prominently with a Cordes biting forceps. In tubercular ulcerative laryngitis, where the actual cautery is indicated, or an application of trichloracetic acid is necessary, this can be done easily and far more accurately than when using the indirect method. Dr. Pollock reported several cases in which suspension laryngoscopy had been done most successfully.

DISCUSSION

Dr. Robert Clyde Lynch (New Orleans) said he had maintained that suspension was preferable under general anesthesia until Dr. Israel had suggested powdered cocaine, which was now used in the great majority of adult cases. He thought this had added greatly to the comfort of the patient under local anesthesia, and so far there was no systemic effect of the cocaine used in that manner. He had practically done away with the necessity for an elaborate table; any ordinary table top which is strong enough to hold the patient suffices. He no longer drops the head over the edge of the table; this has two advantages—first, it is very much easier for assistants who are not accustomed to seeing suspension done or to help in a suspension, and very much easier for a physician or anyone to hold the head straight when it is resting on the table. Second, instead of putting the crane at the very end of the table it is put back as far as the horizontal portion of the crane will permit, with the handle of the crane simply swinging over the edge of the table. By getting the patient in the Johnson position for a view of the larynx the tension is lessened on the neck and hyoid bone and also on the upper teeth. To guard against injury to the lower teeth he had recently been covering them with a modeling compound.

In working on the epiglottis he places the spatula on the base of the tongue and then raises the jack, forcing the tip of the spatula down the lingual face of the epiglottis, and then extends the patient in that way obtaining a very good view of the whole face of the epiglottis and bringing into view the portion wherein the epiglottis lies above the anterior commissure of the vocal cords. In this work he uses a shorter spatula than for larynx work.

He reported thirty-three cases of simple papilloma in children. Thirty of these had been operated at one sitting and there had been no recurrence. They had used no medicine or application that would tend to inhibit a new growth. In one of the cases that had recurred he had reoperated a year ago and the growth had remained away since that time. One of the other cases had been operated on six times and the other four. The one operated six times had finally come to a tracheotomy. The child has a larynx that is as hard as wood, and yet there are true papillomatous growths down in the connective tissue. He thought this bore out the remarks of Green of Boston, that papillomas infect other tissues, for this child has a papilloma of the glottis and uvula and one at the junction of the supratonsillar fold, which it never had before. He cited the case of a

man who had laryngeal tuberculosis with a large ulcer involving half the larynx and eating down into the arytenoid space so as to involve the cartilage and partially obstruct his breathing. His epiglottis had been removed in Denver. This man was suspended twice and on the first period suspension developed symptoms of asthma with a rise in temperature and had rather a stormy convalescence. He had a period of rest for six weeks and then a second anesthetic and had such a stormy time under the anesthetic that a tracheotomy was done, but they succeeded in doing all the second time they wanted to do the first, and the man was perfectly well now. He stated that if he had a similar case he would not wait for the necessity of having to do a rapid tracheotomy, but thought it was justifiable to do a tracheotomy for the anesthetic which would allow one to do all they wished at one sitting without subjecting a tubercular patient to a second anesthetic. In this case an internist had declared that the process in the chest was thoroughly arrested.

DR. JOSEPH BECK stated that when he first employed suspension laryngoscopy he had the head flat on the table. At that time he had never seen the procedure performed, had seen no pictures or anything else, and simply placed the patient flat on the table and attempted to see upwards, but could see nothing. Since he had recently seen Dr. Lynch in Memphis do a suspension operation with the head on the table he had tried it again, but could not see as well as with the head hanging over the table edge, so he continues doing the operation in the latter way.

He considered the contagion or spread of a papilloma very interesting and said that the little boy exhibited by Dr. Pollock had a perfect papilloma around the tracheotomy wound which was attached to the skin.

DR. POLLOCK, closing, said they had had no bad results in these cases from having the head hanging over the table, but that if Dr. Lynch obtained such good results with the supine position there must be something wrong with their technic and they would try his method again.

In treating papillomas they had used no medicine or cautery or anything of the kind, but in the carcinomatous or tuberculous conditions they had cauterized the area. In a great many of the cases the question of doing a tracheotomy arises, and in many instances they do this previously. Most cases referred to them come with the tracheotomy tube in position.

CHICAGO OPHTHALMOLOGICAL SOCIETY.

A regular meeting was held Monday evening, October 15, 1917, with the President, DR. PAUL GUILFORD, in the Chair.

A CASE OF HEREDITARY BILATERAL UPWARD COLOBOMA OF THE IRIS, WITH REMARKS ON HEREDITARY BLINDNESSS.

DR. CLARENCE LOEB stated that although coloboma of the iris could not be justly classed among the very rare ocular malformations, it was not seen so frequently by any one man as not to excite interest. When it was bilateral and unaccompanied by any other developmental lesions, it was of additional interest. But when the lesion had an atypical location and a definite hereditary history running through five generations could be obtained, it certainly became worthy of being put on record.

Miss Z., a graduate nurse, was referred to him in January, 1917, for examination. He found that she had a bilateral coloboma as shown in the drawing which he had made. In the right eye, the defect was much greater than in the left. The remaining portion of the iris started just above the horizontal meridian, temporal side, curved downward and then upward to a point on the nasal side, slightly above that on the temporal. By transillumination, and looking far to the side, the margins of the lens could be seen in the area where the iris was absent, but the ciliary body could not be seen. Moreover the fundus was absolutely normal.

In the left eye, the pupil was extended upward and temporally by the coloboma almost to the periphery, in a position corresponding to about 2 o'clock. A thin edge of iris persisted at this location. In this eye also there was no lesion of the fundus.

The right eye was almost amaurotic, owing to a high degree of myopic astigmatism, while the vision in the left eye was quite good after correction of a small amount of myopic astigmatism.

The patient was a very intelligent woman and repeatedly assured the author that wherever the anomaly had appeared in her family, it had partaken of the same character as in her eyes, namely, bilateral, upwards, and more pronounced on the right than on the left. At the author's request, the patient obtained a detailed family history.

In this family there were instances of both direct and indirect heredity. Counting each affected parent and his children, whether affected or not, as a separate family, there were seven families containing 20 children, of whom 10 or 50 per cent. were affected. There were two families in which the parents were not affected and the children were likewise normal. Finally, there was a case of indirect heredity of one child through an unaffected mother.

In an investigation into the subject of heredity diseases of the eye which the author made in 1908, he was able to collect the histories of 59 families of aniridia or coloboma of the iris. Out of 156 children, 116 or 74 per cent. were affected. This was a higher percentage than obtained in the family whose history he had just related. In addition, a search through the literature since 1908 had revealed other cases which were cited. If every affected parent was counted with his or her children as a separate family, there were 7 families showing a direct heredity. In these families, there were 22 children, of whom 12 were affected and 10 normal. In addition there was one family showing collateral heredity, 5 children; 2 affected and 3 not. He gave statistics of 10 families containing 30 children, of whom 19 were affected, and 11 not affected. If to these were added the families and children in the case he reported, there was a total of 17 families containing 50 children, of whom 29 were affected, and 21 not affected. If the present number of families and children was added to the previous statistics, there were 76 families with a total of 206 children, of whom 70 per cent. were affected.

It was thus seen that the anomalies of the iris were strongly dominant characteristics, tending to be inherited in about three-fourths of the children of a parent so affected. So far as the essayist knew, there had been no case recorded of the marriage of two parents with coloboma of the iris; consequently no statement could be made as to the effect of such a marriage upon the progeny. In cataract, however, the percentage was 60 per cent. in the case of both parents affected, and 58 per cent. in the case of only

one, practically the same. In retinitis pigmentosa, the percentage was 50 per cent. in the case of both parents affected and 50.6 per cent. in the case of only one. again practically the same. However, the number of families in both of these diseases where both parents were affected was so small that no definite judgment should be made.

DISCUSSION.

DR. FRANCIS LANE said that one usually thinks of coloboma of iris in the region of the cleft. After the lenticular vesicle has been formed and is covered with ectodermic structure, and the flask secondary to the optical vesicle has been born, the mesoderm grows from a portion of the optical vesicle which forms the cornea before the anterior chamber is formed. In this mass of mesoderm there is a slit in the connective tissue which forms the pupillary membrane on one side and the cornea on the other. This takes place before the iris grows out from the root of the ciliary body; then it is in close contact with it if the fissure is closed, but if there is failure of the fissure to close, one can understand why there is coloboma in that region. If there is failure of the separation of mesoderm which grows out later from this root between the lens and cornea, one can understand why coloboma can be situated in any position.

DR. LOEB, in closing, said the whole subject of the development of the iris, the chorid or optic nerve has never been definitely accepted. Many theories have been advanced, but where one gets coloboma of the iris in five generations of the same general character, hereditory influence must play an unusually strong part in bringing about one form of developmental anomaly.

THE MANAGEMENT OF SQUINT.

Dr. ROBERT Von der HEYDT read a paper on this subject, stating that from his observations on strabismus he would first exclude alternating squint in which cases there was found good vision and fixation in each eye, but the muscular imbalance of more than usual high degree, thus favoring alternating suppression of the images, also the well understood cases of squint in high hypermetropia where the accommodation necessary to overcome it brought with it an excessive convergence and thus produced a periodical and lateral permanent inward squint. These latter cases were promptly corrected by the early adjustment of correcting lenses to be worn constantly, thus correcting the refractive error, bringing about perfect fixation and fusion, therefore streoscopic vision, and inhibiting the impending development of amblyopia in the converging eye.

It was the other kinds of squint that he wished to consider, the kinds that were less easily handled.

The first three or four years of life presented the critical period in which so much could be done to assist nature in establishing permanent ocular parallelism. This could only be accomplished by a thorough and early study of each case and its possibilities based on a full understanding of the etiological factors producing them.

About the more obscure cases it might be said in short that any factor present in one eye that retarded the development of fixation or made it less accurate in that eye, as, for instance, anisometropia, monocular high astigmatism, emblyopia or any lowered visual perception in it from any cause, would retard the development of fusion and make it impossible. This in itself, the inability to learn fusion, because of the lowered fixation qualifications of one eye, would not in itself necessarily give rise to a squint; it would only predispose. If, however, there was added thereto in the same pair of eyes a tendency to deviation from any cause, a muscle imbalance, the development of a strabismus was inevitable. Expressed in other words, the visual undervalue of one eye plus a tendency toward deviation would bring about a squint. These cases were common, difficult to handle and, therefore, often neglected. Early attention was most important; delay favored the development of monocular vision, the one eye increasing its visual value by taking the work onto itself, the other learning more and more to suppress, with amblyopia exanopsia gradually increasing the difference between the two eyes, until nothing more could be done to coax back the reduced visual acuity.

The first step in the proper handling of the case was to win the confidence of the child, so that a careful retinoscopy could be done under a cycloplegic. It was best to introduce the child to the darkroom at the time of the first visit and give a few flashes with the mirror which proceeding was, as a rule, sufficient to avoid future rebelliousness. When the retinoscope disclosed a sufficient refractive error to reduce visual acuity or hypermetropia calling for several dioptres of accommodative effort, glasses should be given.

A period of sufficient length to enable the parents to teach the child the recognition of numerals was now allowed until the next visit. This was done whether glasses were given or not. This enabled one to make accurate records of the visual acuity of each eye, as on this factor was dependent the character of our efforts and by means of it we might measure progress in the management of the case.

The visual acuity of each eye with and without glasses, also how much that of the better could be reduced by a cycloplegic must constantly be borne in mind for the purpose of intelligently studying the squinting eye, its possibilities, and later the improvement in it. The use of atropin in the good eye to force the use of the mate was an old practice and the author pleaded only for the recognition of its limitations and its application in the selected numbet of cases which could be modified by this method. Results could only be obtained if one really forced the use of the bad eye and could only do so if one succeeded in making it temporarily the better eye of the two by the cycloplegic's action on its mate.

What good would it do, for instance, to thus lower the visual acuity of the good eye for a period of months or years, as was often done, if in spite of this blurring it still remained the one with best acuity? Therefore, the necessity of studying the visual acuity of both eyes under various conditions.

If atropinization of the good eye was sufficient to make it the secor.dary eye, he ordered its use according to the calendar in the following manner: first instance, beginning January 1st a drop twice daily

for three weeks, then stop and come in the last week of February. Resume March 1st for three weeks and continue in a like manner. If advisable, he deprived the better eye of its correcting lens during the atropin period and substituted a smoked lens. This called for the use of cycloplegics about half of the time, or even a longer period could be adopted, and made it necessary for the patient to make only six visits per annum. Parents would persevere, as a rule, if one made it reasonably easy for them.

He had in some cases continued the use of monocular cycloplegia beyond the sixth year and during school time ordered homatropin on Saturday and Sunday. If these methods could not be adopted owing to the lower visual value of the squinting eye, some method of occlusion might be tried. He used periodically a hollow black patch with adhesive strips, so arranged that there could be no peeking. A definite schedule was given to be rigidly enforced.

In a case of convergent squint in high hypermetropia existing for one and one-half years with marked amblyopia exanopsia by the use of atropin in the fixing eye for several years, according to the calendar system outlined before, he had measurably raised the visual acuity of the squinting eye and finally brought about parallelism.

Perseverence and the adoption of a definite system, if the latter did not inpose too many duties upon the parents, would lead to surprisingly favorable results in the many cases so often left to permanent strabismus.

DISCUSSION.

DR. THOMAS FAITH stated that the essayist began by speaking of fusion, but later spoke more of parallelism than anything else.

There are many cases of squint that are corrected so far as parallelism is concerned, but the other two important things one ought to consider, namely, improvement in vision in the squinting eye and binocular vision are lost completely.

As to teaching children to recognize numerals, this can be done after a certain period, but in some of the cases that come early the opthalmologist is obliged to try something else besides teaching numerals in order to obtain a record of vision and be sure whether or not the patients are improving. He has tried some of Worth's ideas like every one else who is doing work of this kind. One idea that is particularly valuable is to remove the correcting lense from the fixing eye which is kept under atropin and compelling the patient to see with the squinting eye, and if possible ascertain the amount of vision in the two eyes with the idea of determining which is the working eye under the conditions. One thing to keep in mind is to get binocular vision if possible, and this can only be obtained even with the amblyoscope after the vision in the squinting eye has begun to improve.

Another thing: by the periodical use of atropin, if we can get the squint transferred from the squinting eye to the fixing eye, we are likely to succeed.

As to the use of the amblyoscope, he has used it with considerable satisfaction and had adopted an idea that Dr. Schwarz is responsible for, that is, having patients use an amblyoscope at home. He has supplied a number of amblyoscopes in that way, and after the patients were through with them, he has taken them back at a reduced price, and has turned them over to other patients at the reduced price, so that one does not lose anything, and the patients' expense is small. The greatest trouble the ophthalmologist has is to teach parents to do what he wants them to do and to get them to take an interest in the case, aside from simply having glasses fitted. In young children, of two or three years, the thing to do is first to put on correction, then make a sort of game each day for the youngsters in having them hunt out something in the house with the fixing eye occluded. It is surprising what interest children take in it if parents will teach them. The parents can find out what a child is particularly fond of, the playthings it is fond of, hide them, and compel the child with the fixed eye to find them. By measuring the distance the child is from an object when he recognizes it and names it, you can obtain an idea what amount of vision the child has.

He has tried to use the little balls that Worth uses, but has not succeeded very well with them because if the child knows exactly what he is looking for all the time, there is no way of determining whether he sees enough to distinguish the little round sphere, or whether he guesses at it.

(To be continued)

GREENE COUNTY

The October meeting of the Greene County Medical Society was held in the Opera House at Hillview, Ill., Friday, October 12, 1917.

The society was called to order at 11:45 a. m. by President O. L. Edwards. The minutes of the last regular meeting were read and approved.

The question of medical ethics was again brought up for discussion by Dr. McLaren and the question discussed pro and con.

Several questions regarding osteopathy, which were brought up at the last meeting and left open for further information, were answered by the Secretary, his information having been received from the Secretary of the State Board of Health.

The society adjourned at 12:30 p. m. for dinner, which was served at the Hillview Hotel.

The society convened at 1:30 p. m. and took up the matter of electing three examiners and three instructors to co-operate with the Red Cross Society regarding first aid work, as per request of the Secretary of the State Society. After much discussion Dr. H. Burns moved that the president appoint the three instructors and the three examiners and that they reside in Roodhouse, Carrollton and White Hall. Upon vote the motion carried and the following physicians were appointed: Instructors, Dr. Howard Burns, Carrollton; Dr. C. R. Bates, Roodhouse, and Dr. L. O. Frech, White Hall. Examiners, Dr. E. E. Jouett, Carrollton; Dr. H. W. Smith, Roodhouse, and Dr. W. T. Knox, White Hall.

Upon motion by Dr. Smith the Greene County Medical Society voted to purchase a fifty dollar Liberty Bond, the same to be paid for by per capita assessment.

The application of Dr. J. J. Lewis, of Hillview, for membership in this society was received and referred to the board of censors for action.

The following program was carried out:

"Rheumatism," Dr. W. T. Knox, White Hall.

"Case Reports," Dr. E. W. Fenity, Kane.

"Caloric Method of Infant Feeding," Dr. L. O. Frech, White Hall.

A most thorough discussion of all the papers followed.

The censors reported the next meeting, which is the annual meeting, would be held in White Hall, Friday, December 14, 1917.

Fifteen members were present.

L. O. Frech, Secretary.

HENDERSON COUNTY

The meeting of the Henderson County Medical Society was held at Stronghurst, November 6, in the Masonic Hall.

Eight members and four visitors were present.

Interesting papers were read by Drs. R. C. Matheny and J. F. Percy of Galesburg and by Dr. C. H. Magee of Burlington, Iowa.

The following officers were elected for the ensuing year: President, C. E. Kaufman, Oquawka; vice-president, E. E. Bond, Stronghurst; secretary-treasurer, J. P. Riggs, Media; censor, three years, J. P. Riggs; delegate, two years, I. F. Harter, Stronghurst; alternate, two years, H. V. Prescott, Dallas City.

Treasurer's report was read and approved.

Dr. Kaufman made motion to raise annual fees from $3.50 to $5.00, which was seconded and carried unanimously.

Petition from Dr. W. H. Wells from Peoria County for admission received and admitted.

J. P. Riggs, Secy.-Treas.

MONTGOMERY COUNTY

The annual surgical clinic of the Montgomery County Medical Society was held at the St. Francis Hospital, Litchfield, Tuesday afternoon, Oct. 30. The operator was Dr. W. R. Cubbins, Assistant Professor of Surgery at Northwestern University. There were a number of interesting cases and a good attendance from Montgomery and neighboring counties. Everyone enjoyed the clinic and all would be glad to have Dr. Cubbins with us again.

The following officers were elected for the year 1917-18: President, C. H. Lockhart; vice-president, J. R. Kenton; secretary, G. W. Cox; treasurer, C. H. Zoller; medico-legal, L. S. Brown; delegate to state society, G. W. Cox; alternate to state society, C. H. Zoller; censors, L. G. Allen, G. A. Sihler, Jr., and T. W. Williams.

TRI-STATE DISTRICT MEDICAL SOCIETY

Second Annual Meeting

Abstract

The second annual scientific and clinical meeting of the Tri-State District Medical Society was held at the Hotel Julian, Dubuque, Iowa, September 4, 5 and 6, 1917. The meeting was a large and notable one in every respect. It was largely through the efficiency and energy of the following Dubuque physicians that the meeting was a great success: Drs. H. G. Langworthy, H. B. Gratiot, C. A. McGuire, J. C. Hancock, J. R. Guthrie, I. S. Bigelow, J. J. Rowan, B. Michel, A. M. Pond, A. M. Loes, C. A. Kearney, H. M. Phalas and J. R. Schrup. The ladies' entertainment committee, Madame H. B. Gratiot, chairman, and Mesdames J. R. Guthrie, W. P. Slattery, I. S. Bigelow, George Minges and C. A. Kearney, also deserves a great deal of credit.

Through the energy of Dr. D. G. Smith of Freeport, Ill., the director of concessions, a number of surgical instrument houses and book concerns were represented by fine displays.

The program committee, consisting of Drs. Lawrence H. Prince of Madison, Wis.; William H. Perry of Sterling, Ill., and C. A. McGuire of Dubuque, Iowa, had worked hard in preparing a program that few medical meetings have ever excelled. The program as published in the August Journal was carried out in detail, with a few exceptions. The scientific and social sessions of the meeting were held in the gold room of the Hotel Julian. The address of welcome on behalf of Dubuque was given by County Attorney Hugh Stuart, who, as spokesman for the city, paid a high tribute to the members of the medical profession and stated that it was the wish of every Dubuquer that the attending physicians should enjoy the hospitalities of this city to the fullest extent. The response to the address of welcome was delivered by Dr. Emil Windmuller of Woodstock, Ill. Dr. Windmuller is councilor of the Illinois State Medical Society, and one of the livest wires in the medical profession of his state. In his address he expressed his gratitude for the manner in which the doctors had been received, the interest manifested by the Dubuque people in the convention and their cooperation in making it a success. He paid a compliment to the Dubuque physicians for the splendid way in which they had arranged for the doctors' entertainment, also as to their high standing in the medical profession. In closing, he stated that this meeting would go down in medical history as one of the finest medical meetings ever held in the middle west.

The first essayist on the program was Dr. Daniel Lichty of Rockford, Ill., his subject being "The Child's and Adolescent's Heart, Pathological Sequeles." The paper showed that Dr. Lichty had given a great deal of time to the study of this subject, and it was thoroughly discussed by Dr. Paul E. Gardner, councilor of Iowa State Medical Society, of New Hampton, Iowa.

Dr. H. A. Sword of Milledgeville, Ill., presented a paper on "Symptoms and Diagnosis of Gall Bladder and Duct Diseases." The doctor handled the subject in a masterly way. The paper was discussed by Dr. I N. Crow of Marengo, Iowa.

Dr. George Kessel of Cresco, Iowa, then read a fine paper on "Abdominal Symptoms—Their Significance." Discussion was led by Dr. Wilson Cunningham, councilor of the Wisconsin State Medical Society, Platteville, Wis., who brought out many points of interest.

At the afternoon session of the first day Dr. J. T.

White of Freeport, Ill., presented a paper on "Prostatectomy Simplex, Another Plea in Conservation." The thorough way in which Dr. White handled the subject showed that he was very familiar with the technique of this operation. The paper was illustrated by first-hand drawings and actual photographs made for lantern slide presentations. The doctor emphasized three important points in his paper. First, the conservation of the health of the man past fifty by a simplified system of relieving the usual obstruction to which 60 per cent of these men are heir. He introduced a "three-phase" treatment instead of the usual one or two-step prostatectomy. The use of a prostatic gauze hemostat offers many advantages not possible with the Pilcher bag or any other hemostat, and this, used together with the three-phase method, makes the mortality from prostatectomies almost nil. An interesting discussion was led by Dr. J. E. O'Keefe of Waterloo, Iowa.

Dr. Henry G. Langworthy of Dubuque, Iowa, read an essay upon the "Practical Consideration of Accessory Sinus Disease with Special Reference to Non-Operative Treatment." Dr. Langworthy's paper was presented in such a way that even those who are not specialists in his line were benefited by it, and it was generally discussed.

Dr. T. W. Nuzum of Janesville, Wis., presented an essay entitled "Fracture of the Spine." This was one of the best papers read at the meeting and was ably and thoroughly discussed by Dr. C. L. Best of Freeport, Ill., and Dr. C. W. Hopkins of Chicago, chief surgeon of the Northwestern Railroad.

An excellent contribution to the program was presented by Dr. Henry Albert, professor of pathology and bacteriology, Iowa City, Iowa, in "Newer Studies in the Prevention of Diphtheria, with Special Reference to the Schick Test and Toxin-Antitoxin Immunization." Needless to say that this was one of the finest essays on the program, and we feel that the society is to be complimented in having among its members such an able essayist as Dr. Albert. Dr. Albert's paper was discussed by Dr. W. D. Stovall of Madison, Wis., and Dr. Guthrie McConnell of Waterloo, Iowa, both specialists in this line.

Dr. L. W. Littig of Davenport, Iowa, presented an essay on "Before the Operation and After"—a noteworthy contribution. Many points in his paper will be of benefit in our individual practice. The discussion of this paper was ably led by Dr. J. Forrest Bell of Elgin, Ill.

Dr. E. F. Murphy of Dixon, Ill., presented a complete essay on the "Indication for and the Technic of the Administration of Blood," showing great technical knowledge of this subject. Dr. J. H. Schrup of Dubuque, Iowa, ably discussed the paper.

The evening meeting of September 4 was taken up by an address in surgery by Dr. C. W. Hopkins, chief surgeon of the Northwestern Railroad. Dr. Hopkins took as his subject "Unusual and Interesting Fractures and Dislocations: Method of Treatment and Results." Every physician who heard Dr. Hopkins' address was well paid for his trip to Dubuque. Informal discussion of Dr. Hopkins' paper was led by Dr. P. A. Bendixen of Davenport, Iowa, and Dr. A. M. Pond of Dubuque, Iowa.

Following Dr. Hopkins' address, vitagraphs of operation and technique of same illustrating bone surgery by Dr. Fred H. Albee of New York were shown. The opportunity of seeing these pictures of Dr. Albee's work was a rare treat for the physicians present and the society feels deeply grateful to Dr. J. H. Schrup of Dubuque for this privilege.

The morning of the second day of the meeting was partly devoted to clinics at Finley and Mercy Hospitals. The clinics were in charge of the Dubuque Clinic Committee, Dr. J. R. Guthrie as chairman. They were devoted entirely to clinical diagnosis and many interesting cases were brought before the physicians. Dr. Edward Ochsner presented a very interesting clinic at Mercy Hospital, the material for same being furnished by local physicians.

At 10 o'clock Dr. Grant W. Hatch of Rockford, Illinois, presented a paper entitled "Medical Treatment of Affections of the Nose and Throat." Many points in this paper were of value to the general practitioner. The paper was discussed by Dr. W. B. Small of Waterloo, Iowa.

Dr. J. J. Grant of Freeport, Illinois, spoke upon the subject of "Empyema of the Pleural Cavity" and presented a simple drainage apparatus for the continuous vacuum treatment of same. In a strong argument for the vacuum treatment of empyema he presented the following points: 1, Better drainage; 2, Immediate expansion of the lung; 3, Prevents formation of fibrous tissue (which forms in all abscess cavities) and allows the lung to come down in contact with the chest wall; 4, The duration of the disease is shortened; 5, It prevents the entrance of air into the pleural cavity, which is most distracting to the patient and detrimental to lung expansion, and has a tendency to diminish any pneumo-thorax present. Dr. Grant's paper was thoroughly discussed, the discusison being led by Dr. Robert White of Prairie du Chien, Wisconsin.

An address in surgery was delivered by Dr. Edward Ochsner of Chicago, the title of address being "A Specific for Every Pathological Micro-organism, the Ultimate Goal of Surgery."[1] Dr. Ochner's address was a rare treat to the large audience of physicians who were present. The address was followed by a very interesting discussion, which was participated in by Drs. Schrup of Dubuque, Iowa; Leitzell of Benton, Wisconsin; White of Clinton, Iowa, and others.

At 2 o'clock, Dr. William A. Pusey, Professor of Dermatology, University of Illinois, delivered a masterly address in medicine, taking as his subject, "A Critical Consideration of Some of the Present Problems in Syphilis." Dr. Pusey is at the present time in Washington, D. C., assisting the Government in preventing and controlling this

1. Abstracted in November JOURNAL, page 305.

affection in the United States Army. This address also excited a very interesting discussion, which was led by Drs. C. L. Best of Freeport, Illinois; Crawford of Cedar Rapids, Iowa; Cottral of Savanna, Illinois; Bryan of Belle Plaine, Iowa; Shannon of Waterloo, Iowa, and others.

Drs. W. A. Pusey, C. W. Hopkins and Edward Ochsner were then extended a vote of thanks by this Society for their distinguished addresses and were made honorary members of the organization.

Dr. G. E. Crawford of Cedar Rapids, Councilor Iowa State Medical Society, read a valued treatise on the present status of blood pressure. Dr. Crawford is a master of this subject and the Tri-State was very fortunate in having him on the program. The discussion of this paper was efficiently handled by Dr. William T. Lindsey of Madison, Wisconsin.

A business session was convened at 4 o'clock and a report of the nomination committee, consisting of Drs. A. M. Pond, Dubuque, Iowa; D. G. Smith, Freeport, Illinois, and Wm. T. Lindsey, Madison, Wisconsin, was heard. The nominating committee presented the following gentlemen to fill the offices of the society for the coming year: Honorary president, Dr. James R. Guthrie, Dubuque, Iowa; president, Dr. W. B. Peck, Freeport, Illinois; first vice-president, Dr. C. A. McGuire, Dubuque, Iowa; second vice-president, Dr. E. S. Gillespie, Winona, Illinois; third vice-president, Dr. Lawrence H. Prince, Madison, Wis.; secretary and treasurer, Dr. Nelson C. Phillips, Freeport, Ill.

The committee on place of meeting for the next annual gathering presented a communication from the Madison Board of Commerce inviting the Society to hold its 1918 convention in that city. The invitation was accepted and it was voted to hold the next annual meeting in the capital of Wisconsin.

Dr. K. F. Snyder of Freeport, Illinois, delivered an essay on "Post Operative Oil Embolism—Its Symptoms, Etiology and Prevention." The Doctor's paper called attention to a comparatively rare, but important condition, which may occur in operation on the obese. He emphasized that special attention should be paid to prompt ligation of all severed veins and a careful coaptation of tissue in the closure of wounds as a means of prevention.

The meeting was then adjourned to a vitagraph studio, where Dr. Snyder completed his essay by presenting a number of fine vitagraphs illustrating his subject.

Dr. A. Alguire of Belvidere, Illinois, also presented some fine illustrations upon the repair of fractures, showing that his success in bone surgery was *par excellence.*

At 8:00 the doctors and their ladies were entertained by the Dubuque County Medical Society through their entertainment committee, headed by Dr. I. S. Bigelow, with a boat ride on the Mississippi. The finest of music and entertainment was offered on this trip, making the word Dubuque synonymous with generosity and hospitality.

The third day of the meeting was opened with a clinic at the hospitals. Dr. John B. Deaver, Philadelphia, Professor of Surgery of the University of Pennsylvania conducted a diagnostic clinic at the Finley Hospital. Dr. Guthrie and his committee had an abundance of material present and Dr. Deaver for over an hour and a half presented case after case to a large gathering of physicians; a ward in the hospital being supplied for this purpose. This was one of the best features of the meeting and the Tri-State feels deeply indebted to Dr. Deaver and the Dubuque committee for making it possible. Dr. Deaver also gave an address in surgery at 11:00 a. m., entitled, "The Applied Physiology of the Prostate Gland." Dr. Deaver's address was a strong argument for the suprapubic operation. The opportunity was given the physicians present of asking Dr. Deaver any questions pertaining to his address. This invitation was responded to by Drs. Schrup of Dubuque, Iowa; White of Freeport, Illinois; Nuzum of Janesville, Wisconsin, and Connell of Beloit, Wisconsin. Dr. Deaver then closed his address and was accorded a hearty demonstration by the large audience of physicians present.

The afternoon session of the third day was opened by an essay by Dr. F. W. Broderick of Sterling, Illinois, entitled, "Direct Laryngoscopy." Dr. Broderick's paper covered the field of laryngoscopy thoroughly, was listened to with close attention by the large audience present, and was discussed by Drs. L. Ostrom of Rock Island, Illinois, and Hatch of Rockford, Illinois.

Dr. McDonald of Aurora, Illinois, then presented a thesis entitled, "Gastroptosis." The large audience was well pleased with Dr. McDonald's paper and a hearty discussion was led by Dr. J. C. Hancock of Dubuque, Iowa.

The next paper on the program by Dr. D. H. Connell of Beloit, Wisconsin, entitled, "Some Difficult Diagnostic Surgical Problems," was thoroughly discussed by the attending physicians.

Dr. H. M. Orr of LaSalle, Illinois, delivered an essay entitled, "Diagnosis and Treatment of Pyloric Stenosis." He prefaced his paper by a patriotic talk which showed that the doctor was not lacking in patriotism and the enthusiasm with which this part of his address was received by the large audience of physicians showed that they were in hearty accord with this spirit.

The final treat of the scientific program was an address in surgery by Dr. Charles H. Mayo, president of the A. M. A., who chose as his subject, "Exstrophy of the Bladder and Its Treatment." The address of Dr. Mayo was closely listened to by a large gathering of physicians from all parts of the three states. The doctor's address was a fitting close of a medical and surgical program which had held the attention of a large and enthusiastic assembly of physicians during the three days' session.

The evening session of September 6, was taken

up with an annual banquet of the Medical Association held in the Gold Room of the Hotel Julian. Plates were laid for four hundred guests, Dr. Thomas E. Throckmorton, the efficient secretary of the Iowa State Medical Society, officiated as toastmaster. Dr. Throckmorton's ability in successfully handling medical meetings and banquets is well known, but we believe that on this occasion he out-generaled his former efforts. From the time he assumed the toastmastership until he closed the banquet every one was in a happy frame of mind.

Dr. Deaver spoke in a patriotic tone of the present government crisis, and the duty of the physician to his country. Dr. Deaver's remarks were received with long applause, which did not cease until the Doctor made a number of bows. Dr. Charles Mayo was the next speaker. He spoke of the recent advances in medicine and surgery with special application to the war conditions. He also, like Dr. Deaver, called atention of the physicians to their duty to their country at this time. By the time Dr. Mayo had finished his address, the audience was in a very enthusiastic frame of mind and Dr. Mayo was compelled a number of times to rise to his feet in acknowledgement of the spirit.

Major E. B. Coolley, Danville, Illinois, president Illinois State Medical Society, entertained the doctors with a very able and patriotic address. Major Coolley always has the faculty of saying the right thing at the right time. He referred in a complimentary manner to the distinguished physicians who had spoken before him, also of the honored guests who were to follow him, Governors Harding of Iowa and Lowden of Illinois. Major Coolley has a very clear vision of the future and staked his reputation in a prophecy (which we all feel willing to back) that Governor Lowden was only a temporary resident of Illinois and that the time was near at hand when our nation would claim him as its chief executive. Major Coolley's remarks were received with hearty applause.

Hon. William L. Harding, Governor of Iowa, spoke in terms of praise of the medical profession and the opportunity it had in helping to defend the country in the present crisis. The Governor said, "I deem the opportunity of addressing the Tri-State Medical Society one of the rarest privileges that has been accorded me during my experience in public life. It is an inspiring occasion and I only hope that my efforts are worthy of the importance of the event." Governor Harding also spoke in glowing terms of Governor Lowden of Illinois. He said that Governor Lowden was raised in Iowa and that they had only loaned him to Illinois; that some day in the near future they were going to reclaim him, as he believed that Governor Lowden was on the way to the White House. The applause that greeted Governor Harding's remarks lasted for many minutes and only ceased when the Governor had responded with a number of salutations.

The last speaker at the banquet was Governor Lowden of Illinois. The deep appreciation of the Governor's presence caused a demonstration on both the part of the doctors and the ladies that compelled the speaker to wait for a considerable time before beginning his address. The Governor spoke in an earnest and convincing manner in regard to our duties as American citizens in the present crisis. He paid tribute to the distinguished medical guests present and spoke in praise of the medical organization. He said that he considered the opportunity of addressing this society a great privilege and that the pleasure of doing so would long be remembered by him. Governor Lowden's remarks were frequently interrupted by applause especially when he referrd to state and government affairs. There was an energetic exhibition of feeling on the part of the entire audience at the close of the Governor's address, which coninued until the toastmaster had to come to the Governor's rescue and insist that it was time for the guests to catch their trains.

Doctors Deaver and Mayo, and Governors Lowden and Harding were made honorary members of the association.

A vote of thanks was extended to the Dubuque physicians for the splendid hospitality extended the visiting physicians.

The committee on resolutions then presented their report as follows:

Mr. President and Members of the Tri-State District Medical Society:

Your committee on resolutions herewith tenders its report, viz.:

Be it *Resolved*, that we, the members of the Tri-State District Medical Society, in convention assembled, do hereby express our sincere appreciation and thanks for the splendid hospitality extended to us by the people of Dubuque.

We are especially indebted to the members of the Dubuque County Medical Society and the ladies of Dubuque associated with them for their interesting efforts and generous entertainment;

And be it further *Resolved*, that we wish to sincerely thank the guests of this Society for their able papers and their interesting clinics. Be it further

Resolved, that the following guests, Dr. C. W. Hopkins of Chicago, Dr. Edward Ochsner of Chicago, Dr. William A. Pusey of Chicago, Dr. John B. Deaver, Dr. Charles H. Mayo, of Rochester, Minnesota, be made honorary members of this Society.

Be it further *Resolved*, that we extend our thanks to their Excellencies, Governors Frank O. Lowden of Illinois, and William L. Harding of Iowa, for their presence and participation in our meeting.

Further *Resolved*, That the members of this Society, in convention assembled, pledge their unswerving loyalty and service to the Government of the United States in the great conflict in which it is engaged, and that they express their unanimous

and whole-hearted commendation of the patriotic utterances and acts of the Governors of Iowa, Illinois and Wisconsin, the great commonwealths of the Middle West, whose sons have proudly borne their banners to the forefront on every occasion of national stress and peril.

WILLIAM A. CUNNINGHAM, Platteville, Wis., Chairman.
T. W. NUZUM, Janesville, Wis.,
A. ALGUIRE, Belvidere, Ill.,
J. C. HANCOCK, Dubuque, Iowa,
C. L. BEST, Freeport, Ill.,
EDWIN S. GILLESPIE, Winona, Ill.,
Commitee on Resolutions.

Personals

Dr. W. J. Donohue, Plainview, has been appointed game warden for Macoupin County.

Dr. Wm. M. Craig, Kenney, has retired, selling his practice to Dr. Fred Blome of La Hogue.

Dr. C. A. Frazee, Springfield, sustained a double fracture from cranking his car, November 7.

Lieut. A. L. Stebbings, of Marseilles, enjoyed a ten-day furlough while preparing to be sent to Honolulu.

Dr. Edward A. Glasgow was elected president of the First National Bank of Mulberry Grove, November 5.

Dr. Esther Lovejoy of Portland, Ore., is said to have been commissioned first lieutenant by the French government.

Dr. Joseph B. Liston, Carlinville, has been appointed a member of the staff of the Jacksonville State Hospital.

Dr. W. J. Eddy, Shelbyville, sustained a Colles' fracture on cranking his car for the first time after the car was rewired.

Dr. Silvio Von Rueck, of Asheville, N. C., addressed several meetings in Peoria last month, at factories, hospitals and clubs.

Dr. Rachel Yarros, Chicago, addressed the conference of high school clubs of the Y. W. C. A. of the state at Springfield, November 17.

Dr. Martin L. Moyer, Hillsboro, was operated on in the Hillsboro Hospital, November 2, for nephrolithiasis, and is reported to be doing well.

Dr. Carl F. Raver, formerly health officer of Aberdeen, S. D., has succeeded Dr. Ruediger as director of the Hygienic Institute of the tri-cities.

Capt. H. L. Thompson, after a course of six weeks at the Rockefeller Institute and Belleview Hospital, will be assigned to the base hospital at Atlanta.

Dr. Edgar P. Cook, Mendota, has been appointed chairman of the co-operative committee to promote the antituberculosis campaign of the State Council of Defense.

Dr. G. F. Ruediger, for three years health commissioner of La Salle, Peru and Oglesby, has resigned and removed to Reno, Nev., where he will be director of the State Hygienic Laboratory.

Dr. Victor Lespinasse, Chicago, addressed the Galesburg Medical Society on "Sterility in Both Males and Females," November 6. The address was illustrated by lantern slides. After the lecture a reception was held at the Elks' Club.

Capt. E. C. Franing, U. S. M. R. C., addressed the students of Knox College, Nov. 15, on the sanitary control in modern war. As the local paper quotes him: "In every phase of the war science is brought to the front and is fighting this struggle."

Dr. Clifford C. Ellis, formerly a member of the staff of the Chicago State Hospital, Dunning, has been appointed assistant superintendent of the Watertown State Hospital, succeeding Dr. Edward A. Foley, transferred to similar duty at the Chicago State Hospital.

The following constitute the Local Committee on Arrangements for the session of the American Medical Association to be held in Chicago, June 10-14, 1918: Drs. Ludvig Hektoen, chairman; Charles J. Whalen, secretary; W. A. Pusey, John V. Fowler, Hugh T. Patrick, M. L. Harris, Charles F. Humiston, J. B. Herrick and Frank Billings.

Major William J. Swift, Chicago, commanding the Field Hospital Section of the Thirty-Third Division, Camp Logan, Houston, Texas, has resigned, and his resignation has been accepted, to take immediate effect. Major Eugene G. Clancy, Chicago, formerly of the Seventh Illinois Infantry, and later commander of the One Hundred and Thirtieth Field Hospital, has been appointed Major Swift's successor.

News Notes

—Two women graduates of snide medical schools in Chicago are at present under investigation as abortionists.

—As a result of the four days' White Elephant Sale, held in the old Calumet Club Building, November 7 to 10, $25,369 was raised for the Children's Memorial Hospital.

—Another case that has received more advertising than it deserves is the H. J. H—— baby, which is taking "deadly drugs that will kill it in a few months." What did you say, deadly?

—It is reported that the first licenses for the use of German patents were issued by the federal trade commission, November 27, to three chemical manufacturers for the production of salvarsan.

—Drs. Frederick Tice and Adolph Hartung, of Chicago, and Dr. George Thomas Palmer, of Springfield, were speakers at the meeting of the Henry County Medical Society, at Kewanee, November 14.

—Physicians who find it difficult to collect their accounts would do well to consider the case of one Carme Romano against the Lindlahr Sanitarium for false imprisonment. Romano admits that he had to give up $20 before he was released.

—At the meeting of the German Hospital Association, held November 15, the question of changing the corporate name of the institute from "The German Hospital of Chicago" to "The General Hospital of Chicago" was voted down, and the institution will retain its original name.

—The Central Free Dispensary of Rush Medical College announces that the reconstruction of invalided soldiers and men and women physically unfit who are needed in the industries will constitute an important part of the work of the institution during the coming year. Eighteen members of the staff of the dispensary are now in the army service.

—Dr. James D. Banta, of Rock Island, was convicted November 22 under the Harrison law. His case is claimed to be an aggravated one. Three other physicians and two druggists were convicted under the same law at the same term of court in Peoria. The death of a dope victim from tetanus, due to the use of an infected hypodermic needle, figured in the case of Dr. Banta.

—Tuberculosis and its relation to the war was the subject of a conference at Springfield, November 22-25, attended by medical directors and health officers from central and southern Illinois. Meetings were held at the Springfield tuberculosis dispensary, the Open Air Colony and at St. John's Hospital. The meetings were under the auspices of the State Council of Defense, the State Department of Health and the Illinois Tuberculosis Association.

—Winnebago County Medical Society held a social meeting in Unity Hall, Rockford, November 12, to entertain the medical men connected with Camp Grant. Dr. Geo. P. Gill, in the absence of Dr. Park on military duty, presided as toastmaster. Lieutenant Colonel James M. Phalen, First Lieutenant Philip Lewin and Captain Harry S. Gradie, of Camp Grant, responded to their respective toasts. Miss Marian Culhane, daughter of Dr. T. H. Culhane, was the soloist of the evening.

—At the Forty-third Annual Meeting of the Southern Illinois Medical Association, held at Murphysboro, November 1 and 2, 1917, the following officers were elected for the ensuing year: President, Dr. E. C. Alvis, Benton; First vice-president, Dr. H. H. Roth, Murphysboro; second vice-president, Dr. Max Adles, DuQuoin; secretary-treasurer, Dr. A. B. Capel, Shawneetown; assistant secretary, Dr. C. W. Lillie, East St. Louis.

The next meeting of the Association will he held in East St. Louis.

—The readers of the JOURNAL will be sorry to learn of the serious illness of Dr. W. H. Gilmore, Secretary of the State Society. Dr. Gilmore was attacked by an infection of the carbuncle variety during the last of October. On November 18th he was removed to the Missouri Baptist Sanitarium at St. Louis, where a radical operation has given him relief, and he is at this date on his way to recovery. We hope the doctor will soon be at work again, and relieve Mrs. Gilmore of the secretary's burden.

—At the ninth annual meeting of the Illinois Association for the Study and Prevention of Tuberculosis, held in Champaign, November 9,

the following officers were elected: President, Dr. George Thomas Palmer, Springfield (re-elected for the seventh term); vice-presidents, Dr. William A. Evans, Chicago; Ethan Allen Gray, Chicago; Cecil M. Jack, Decatur, and Lewis C. Taylor, Springfield; secretary, Dr. Jeanette C. Wallace, Peoria; treasurer, Mr. David R. Forgan, Chicago; executive committee, new members: Dr. James W. Pettit, Chicago; Mrs. Joseph T. Mason, Aurora, and George W. Perkins, Chicago, and holdover members, Mrs. A. L. Adams, Jacksonville; Dr. Edward W. Fiegenbaum, Edwardsville, and Dr. Orville W. McMichael, Chicago.

Marriages

KARL ALBERT MEYER, M. D., to Miss Faye Hart, both of Chicago, November 11.

EDGAR P. COOK, M. D., Mendota, to Miss Mary McIntyre of Dixon, in Chicago, November 3.

EUGENE EMMETT BIRMINGHAM, M. D., to Miss Theresa Celia Kelly, both of Chicago, October 24.

OSCAR WALTER REST, M. D., Chicago, to Miss Dora Lucile Lake of Madison, Wis., November 21.

ARTHUR FRANKLIN WOLFORD, M. D., Chicago, to Miss Nadine Wiley of Moberly, Mo., at Chicago, November 7.

LIEUT. FREDERICK CHRISTOPHER, M. R. C., to Miss Madeline Smith, both of Chicago, December 1. Lieutenant Christopher is attached to the Mobile Surgical Unit, No. 1.

LIEUT NORMAN ZOLLA, M. C. Ill. N. G., assigned to One Hundred and Thirty-First Field Hospital Company, Camp Logan, Houston, Texas, to Miss Mary McGinty of Chicago, November 11.

Deaths

MARTHA J. CREIGHTON, M. D., Chicago; Hahnemann Medical College, Chicago, 1884; aged 84; died at her home, November 14.

HERMAN MEYER, Chicago (license, years of practice, Illinois, 1878); aged 69; died at his home, November 3, from strangulated hernia.

MARTHA A. STEVENS, M. D., Downers Grove, Ill.; New York Hygeio-Therapeutic College, New York, 1861; aged 82; died at her home, November 2.

WILLIAM LEWIS TALLMAN, M. D., Chicago; Bellevue Hospital Medical College, 1881; aged 58; died at his home, October 27, from cerebral hemorrhage.

EDWARD L. STAHL, M. D., Chicago; Rush Medical College, 1883; aged 64; also a graduate of the Chicago College of Pharmacy; died at his home, November 12, from cerebral hemorrhage.

JAMES M. BARTHOLOW, M. D., Urbana, Ill.; Rush Medical College, 1871; aged 70; a member of the Illinois State Medical Society; a veteran of the Civil War; died at Champaign, Ill., October 8.

FRANK BLAIR LOVELL, M. D., Gibson City, Ill.; Rush Medical College, 1888; Bellevue Hospital Medical College, 1893; aged 51; a Fellow of the American Medical Association; died in the Presbyterian Hospital, Chicago, November 11, from typhoid fever.

MARSHALL CURTIS MUNN, M. D., Sycamore, Ill.; College of Medicine and Surgery, Physio-Medical, Chicago, 1893; Hospital College of Medicine, Louisville, Ky., 1895; aged 58; a member of the Illinois State Medical Society; died at his home, October 15, from tuberculosis of the larynx.

ESTELLA HORTON HOUGHTON, M. D., Chicago; Northwestern University Woman's Medical School, Chicago, 1899; aged 54; formerly a member of the Illinois State Medical Society; a specialist on diseases of the eye, ear, nose and throat; died in Wesley Hospital, Chicago, October 24, from cerebral embolism.

MARY O'BRIEN PORTER, M. D., Chicago; Kansas Medical College, Topeka, 1899; Northwestern University Woman's Medical School, Chicago, 1901; aged 47; a member of the Illinois State Medical Society, and a member of the staff of the Psychopathic Laboratory for the Municipal Courts; died at her home, November 18, from pneumonia.

LIEUT. ORLANDO MERRILL GOCHNAUR, M. R. C., U. S. Army, Freeport, Ill.; College of Physicians and Surgeons, Chicago, 1915; intern in the Calumet and Hecla Hospital, Calumet, Mich., and later in the Henrotin Memorial Hospital, Chicago; who went to France in September, and was on duty with the British forces in Flanders, is reported to have been killed in action, November 6.

BYRON C. STOLP, M. D., Wilmette, Ill.; Bennett Medical College, Chicago, 1873; aged 66; a Fellow of the American Medical Association; a pioneer resident of Wilmette, and a well known physician of the north shore; a member of the medical staff of the Evanston Hospital since its foundation; who was run down by an automobile, October 30, in Wilmette, died from his injuries, November 2.

JOHN H. WOOD, M. D., Champaign, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; aged 74; a veteran of the Civil War; formerly mayor of Deland, Ill.; died at his home in Champaign, October 18, from malignant disease.

Book Notices

A Manual of Anatomy. By Henry E. Radasch, M. Sc., M. D., Assistant Professor of Histology and Embryology in the Jefferson Medical College, Philadelphia. Octavo of 489 pages with 329 illustrations. Philadelphia and London: W. B. Saunders Company. 1917. Cloth, $3.50 net.

A manual intended for the first year student, filling the space between the large works of anatomy and the small.

It is well gotten up, the illustrations are many, and good. It should be a most useful book for the study of anatomy, for students and nurses.

Diseases of Women. By Harry Sturgeon Crossen, M. D., F. A. C. S., Associate in Gynecology, Washington University Medical School, and Associate Gynecologist to the Barnes Hospital, Gynecologist to St. Luke's Hospital; Fellow of the American Gynecological Society and of the American Association of Obstetricians and Gynecologists. 4th edition, revised and enlarged with 800 illustrations, 1,149 pages. Price, $7.50. C. V. Mosby Co., St. Louis. 1917.

This new addition of Crossen stamps it as one of the best works on the diseases of women. A careful perusal of this edition brings to light many new additions, principally the chapter on the glands of internal secretion and their relationship to various gynecological conditions. Much revision and many new illustrations are observed.

It should prove to be as valuable to the general practitioner as to the gynecologist. The success of the previous editions should be greatly increased by the present edition.

History of Medicine. Suggestions for study and Bibliographic Data. By Fielding H. Garrison, A. B., M. D., Principal Assistant Librarian, Surgeon General's Office, Washington, D. C., second edition revised and enlarged. Octavo of 905 pages with many portraits. W. B. Saunders Company, Philadelphia and London. 1917. Cloth, $6.50 net; half morocco, $8.00 net.

This fascinating subject is extremely well presented by Garrison in this new edition. It is a work that presents the subject in an exceedingly interesting and readable form, one that required a great deal of time and labor. It should be appreciated greatly by the physician, as it offers him a great opportunity to gain a knowledge about the men that have to do with medicine from the earliest known period to the present. This volume should find a place in every doctor's library.

Chicago Medical Directory. 32d annual edition. Containing a list of Physicians and Surgeons of Cook County, Druggists, Medical Schools, Hospitals, Sanitariums and Medical Societies. Physicians and Druggists' Street Directory, Numerically Arranged. 1917. Price, $3.00. Copyright, 1917, by McDonough & Company, Publishers, 416 S. Dearborn street, Chicago.

The Chicago Blue Book is the most complete directory of Chicago physicians, druggists, hospitals, medical societies, etc., that is published. It is a useful directory not only to Chicago physicians, but will be of service to down-state physicians as well. The Journal acknowledges a copy.

Manuel of Laboratory Diagnosis. By Stella M. Gardner, M. D., and Mary C. Lincoln, Ph. B., M. D., formerly Assistant Professors of Laboratory Diagnosis, College of Medicine, University of Illinois. Price, $1.25. Chicago Medical Book Company, Chicago. 1917.

This book treats the subject of the clinical examination of blood, urine, stomach contents, feces, human milk, spinal fluid and sputum. The Wassermann reaction is discussed and the technic of the test given in detail. The chapter on bacteriology gives practical methods of examination and diagnostic characteristics and significance of the important pathogenic bacteria.

A multiplicity of methods is avoided; as a rule, one practical test in each case is given in sufficient detail to be used even by the inexperienced student.

The diagnostic significance of findings is presented in tables or brief discussions, a feature seldom included in small handbooks.

The book is designed as a guide for students of medicine, internes or other workers in hospital laboratories, and for physicians.

The Physician's Visiting List for 1918. Sixty-seventh year of its publication. P. Blakiston's Son & Co., 1012 Walnut street, Philadelphia. Sold by all Booksellers and Druggists.

This is the regular annual physician's visiting list, published by P. Blakiston's Son & Company, and is uniform with previous editions. It contains the usual dose tables.

Impotence and Sterility. With Aberrations of the Sexual Function and Sex-Gland Implantation. By G. Frank Lydston, M.D., D.C.L. Price, $4.00. Sold by subscription only. Sent postage prepaid on receipt of subscription price.

This work is the result of much thought, experimentation and actual practice by a pioneer in this field. Dr. Lydston's work in this field is known personally to a great number of practitioners, and to them the issuance of this volume will be welcome. The subject is covered in the author's characteristic way, and is highly interesting.

His results, as reporter, are good, and if further observation proves the adaptability of his methods, they should be epoch making.

Stanolind

Trade Mark Reg. U. S. Pat. Off.

Liquid Paraffin

(Medium Heavy)

Tasteless — Odorless — Colorless

In Treating Hemorrhoids

STANOLIND Liquid Paraffin, used regularly, very generally relieves hemorrhoids and fissure, even when of some years' standing.

Since these morbid conditions are usually the result of constipation, and are aggravated by straining, Stanolind Liquid Paraffin aids by rendering the intestinal contents less adhesive, by allaying irritation and thus by permitting the diseased tissues to become healed.

Where a contraindication for operative treatment exists, the use of Stanolind Liquid Paraffin in these conditions will frequently give relief from distressing symptoms and may even permit the parts to be restored to a condition where operative procedure may be postponed.

The ***special advantage*** of Stanolind Liquid Paraffin lies in the fact that its beneficial effects are not diminished by continual use, as is the case with almost any other laxative.

Stanolind Liquid Paraffin acts by lubrication and by adding bulk to the indigestible intestinal residue.

A trial quantity with informative booklet will be sent on request.

Standard Oil Company

(Indiana)

72 West Adams Srreet

Chicago, U. S. A.

An Efficient Sugar for Infant Feeding

means maximum tolerance, assimilability, and gain in weight with minimum digestive disturbances and diarrhoea for the infant. This is why nearly every pediatrist prescribes

MEAD'S DEXTRI-MALTOSE

(MALT SUGAR)

in feeding formulae for infants' diet

Let us send you samples and literature fully describing the simplicity of using Mead's Dextri-Maltose in any milk mixture in the same proportion as milk or cane sugar, but with better results.

MEAD JOHNSON & CO., EVANSVILLE, IND.

A TRUE P-M LINE

In the present uncertain state of the drug market, with the demand for many items far exceeding the supply, the market is being flooded with crude drugs and chemicals of inferior quality, many of which are being offered at very low prices.

For the protection of American Physicians, crudes and chemicals entering into the manufacture of P-M Co. pharmaceuticals are secured from reliable sources *only* and are subjected to the closest scrutiny by our chemists. Constant analyses and assays protect you, Doctor, against untrustworthy ingredients when you use the pharmaceuticals of

A TRUE P-M LINE

PITMAN-MOORE COMPANY
Pharmaceutical and Biological Chemists
Indianapolis

HOYT'S GLUTEN BREAKFAST FOOD

Eaten by those who are desirous of adding protein to their diet with minimum starch.

Send for description of our two breakfast foods and our other genuine gluten products and name of our nearest agent.

THE PURE GLUTEN FOOD CO.
90 West Broadway NEW YORK CITY

Hay Fever

Successfully Treated with

BACTERIAL VACCINES

Pollen irritation and breathing of the hot dust laden atmosphere favor the development of pyogenic bacteria in the respiratory tract which then becomes a primary factor of the disease.

Experience shows that the immunizing influence of an appropriate bacterin will either cure the disease or so modify it that it causes but little distress. Use Sherman's No. 40.

Write for Literature.

MANUFACTURER OF BACTERIAL VACCINES

G. H. SHERMAN, M.D.
Detroit, Mich. U.S.A.

Not All Bran

But Effective

Our doctor friends, some years ago, asked us to make a bran dainty.

They wanted a food which was staple and likable—a food to be continued.

They wanted the bran in flake form, to have maximum efficiency.

We made Pettijohn's for them—25 per cent bran flakes, hidden in soft rolled wheat. Now people are serving—largely by doctors' advice—nearly a million dishes weekly.

You will prefer Pettijohn's, we think, to any clear bran food when you know it. And so will those to whom you recommend it.

Pettijohn's

Rolled Wheat with Bran Flakes

Soft, flavory wheat rolled into luscious flakes, hiding 25 per cent of unground bran. A famous breakfast dainty.

Pettijohn's Flour is 75 per cent fine patent flour mixed with 25 per cent tender bran flakes. To be used like Graham flour in any recipe; but better, because the bran is unground.

The Quaker Oats Company
Chicago

(1753)

FIRWEIN—Expectorant—Sedative—Antispasmodic
The Better Prescription in the Different Forms of Bronchial Inflammations.
Free Samples to the Profession
New Lebanon, N.Y. THE TILDEN COMPANY Manufacturing Pharmacists and Chemists since 1848 St. Louis, Mo.

The Pennoyer
Established 1897
Kenosha, Wis., between Chicago and Milwaukee on the North-Western R. R. Finest Health Resort and Sanitarium on Lake Michigan. Beautiful environment—a mile of lake shore. For illustrated prospectus address
N. A. Pennoyer, M. D.

KALMERID CATGUT
A Physiologically Correct Germicidal Suture
DAVIS & GECK, INC.
217-221 Duffield Street
Brooklyn, N.Y., U.S.A.

DOCTOR: It is our purpose to give to you on your orders, the best pharmaceuticals that the highest grade of crude drugs, pure chemicals and skilled workmanship, under experienced supervision, can produce.

When our man calls upon you, give him a few moments of your time. He will tell you more about what we are trying to do.

G. D. SEARLE & CO. Mfrs. of Fine Pharmaceuticals and Hypodermic Tablets
215-217-219 W. Ohio St. CHICAGO Telephone North 1704

Special INFANT FEEDING
Malnutrition-Marasmus-Atrophy

MELLIN'S FOOD
4 level tablespoonfuls
SKIMMED MILK
8 fluidounces
WATER
8 fluidounces

Analysis:

Fat	.49
Protein	2.28
Carbohydrates	6.59
Salts	.58
Water	90.06
	100.00

The principal carbohydrate in Mellin's Food is maltose, which seems to be particularly well adapted in the feeding of poorly nourished infants. Marked benefit may be expected by beginning with the above formula and gradually increasing the Mellin's Food until a gain in weight is observed. Relatively large amounts of Mellin's Food may be given, as maltose is immediately available nutrition. The limit of assimilation for maltose is much higher than other sugars, and the reason for increasing this energy-giving carbohydrate is the minimum amount of fat in the diet made necessary from the well-known inability of marasmic infants to digest enough fat to satisfy their nutritive needs.

MELLIN'S FOOD COMPANY, BOSTON, MASS.

Dichloramine-T

DAKIN'S OIL SOLUBLE ANTISEPTIC

USABLE IN CONCENTRATIONS TWENTY TO EIGHTY TIMES AS STRONG AS HYPOCHLORITE SOLUTION.

During the Clinical Congress of Surgeons, held in Chicago, October 22 to 27, the use of DICHLORAMINE-T was reported in 7,228 surgical cases, with very remarkable results.

Twelve hundred cases of war wounds treated in France with DICHLORAMINE-T were also reported, with 99.5% recoveries and no secondary hemorrhages.

DICHLORAMINE-T is used as an oil spray for nasal and throat work to destroy the microorganisms of diphtheria, meningitis, and other diseases. It is also used as a spray for surface wounds and burns, and is poured into deep wounds, thus doing away with intermittent or continuous irrigation and frequent changes in expensive dressings.

TRIAL OUTFIT

1 ounce DICHLORAMINE-T — 4 ounces Chlorinated Eucalyptol
All Glass Atomizer — 16 ounces Chlorinated Paraffin Oil
Sample Vial of Chlorazene Tablets.

Price of Complete Outfit with full directions and Literature, $5.35, direct from Our Laboratories or through your druggist.

In Canada, Customs Tariff must be added to price quoted.

THE ABBOTT LABORATORIES

CHICAGO — NEW YORK

SEATTLE SAN FRANCISCO LOS ANGELES TORONTO BOMBAY

ILLINOIS STATE MEDICAL SOCIETY

SECTION OFFICERS AND COMMITTEES

SECTION ON SURGERY
John S. Nagel, Chairman.....Chicago
H. A. Millard, Secretary.....Minonk

SECTION ON MEDICINE
C. Martin Wood, Chairman.....Decatur
S. R. Slaymaker, Secretary.....Chicago

SECRETARIES' CONFERENCE
Flint Bondurant, President.....Cairo
F. C. Gale, Secretary.....Pekin

SECTION ON PUBLIC HEALTH AND HYGIENE
Grace Campbell, Chairman.....Chicago
W. E. Park, Secretary.....Rockford

SECTION ON EYE, EAR, NOSE AND THROAT
J. Sheldon Clark, Chairman.....Freeport
Wesley H. Peck, Secretary.....Chicago

COUNTY SOCIETIES

This list is corrected in accordance with the best information obtainable at the date of going to press. County Secretaries are requested to notify The Journal of any changes or errors.

Adams County
J. L. Aleshire, Pres.....Plainville
Elizabeth B. Ball, Secy.....Quincy

Alexander County
J. W. Dunn, Pres.....Cairo
R. E. Barrows, Secy.-Treas.....Cairo

Bond County
W. T. Easley, Pres.....Greenville
J. C. Wilson, Secy.....Greenville

Boone County
Geo. Markley, Pres.....Poplar Grove
H. E. Delavergne, Secy.....Belvidere

Brown County
D. R. Peters, Pres.....Mt. Sterling
E. C. Allworth, Secy.-Treas.....Mt. Sterling

Bureau County
C. C. Barrett, Pres.....Princeton
M. A. Nix, Secy.....Princeton

Calhoun County
W. A. Skeel, Pres.....Kampsville
J. H. Peisker, Secy.....Hardin

Carroll County
G. E. Merchon, Pres.....Mt. Carroll
R. B. Rice, Secy.-Treas.....Mt. Carroll

Cass County
C. E. Soule, Pres.....Beardstown
W. R. Blackburn, Secy.....Virginia

Champaign County
O. O. Stanley, Pres.....Urbana
J. C. Dallenbach, Secy.....Champaign

Christian County
R. C. Danford, Pres.....Pana
S. B. Herdman, Secy.....Taylorville

Clark County
H. C. Houser, Pres.....Westfield
L. J. Weir, Secy.....Marshall

Clay County
C. E. Duncan, Pres.....Flora
R. D. Finch, Secy.....Flora

Clinton County
Orvil O'Neal, Pres.....Shattuc
J. Q. Roane, Secy.....Carlyle

Coles-Cumberland County
Wm. Smith, Pres.....Toledo
R. H. Craig, Secy.-Treas.....Charleston

(Continued on page 11)

WHEN A TONIC IS NEEDED

the best obtainable is called for—in its composition, in its quality and character, and above all, in its capacity to promote bodily vitality and strength. In

Gray's Glycerine Tonic Comp.

FORMULA DR. JOHN P. GRAY

the practitioner has at his command a restorative and reconstructive that justifies every confidence. Of the highest quality and constant uniformity—in spite of the drug market—and exceptional therapeutic efficiency, the use of "Grays" is a guarantee that the best possible results will be obtained in each and every case.

For over a quarter of a century "Grays" has been one of the most widely—and successfully—used remedies in atonic and debilitated conditions.

COMPOSITION

Glycerine
Sherry Wine
Gentian
Taraxacum
Phosphoric Acid
Carminatives

"Grays" is now supplied in two sizes—a 6 oz. prescription size, and the original 16 oz. package.

INDICATIONS

Auto-Intoxication
Atonic Indigestion
Anemia
Catarrhal Conditions
Malnutrition
Nervous Ailments
General Debility

THE PURDUE FREDERICK CO., 135 Christopher St., New York

In the Treatment of

Cystitis—Urethritis
Pyelitis—Prostatitis—Bacilluria

HELMITOL

ACTS AS

An Efficient Urinary Antiseptic

Agreeable of Administration—Generally Well-Tolerated by the Gastro-Intestinal and Urinary Tract.

Conveniently taken in Tablets, which readily dissolve.

Supplied in 5 gr. tablets, bottles of 25 and 100, and in powder in ounces.

Samples and Literature supplied by

THE BAYER COMPANY, Inc.
117 Hudson St., New York, N.Y.

Chicago Pasteur Institute

26th YEAR **812 NORTH DEARBORN STREET** **CHICAGO**

FOR THE PREVENTIVE TREATMENT OF HYDROPHOBIA

ANTONIO LAGORIO, M.D. LL.D., Medical Director G. B. BRUNO, M.D., Associate Director FRANK A. LAGORIO, M.D., Associate Director

Announcement—When patients are unable to come to Institute, we can furnish physicians our course of Pasteur treatment by mail, in the State of Illinois.
Telephone Superior 973.

N. B.—We have no branches and the use of our name is unauthorized.

PASTEUR INSTITUTE of ST. LOUIS

We are prepared to furnish the Pasteur Treatment for the prevention of rabies to any physician in the United States, by *Special Delivery Mail*. We are licensed by the Treasury Department to engage in Interstate Commerce with this product.

We furnish Eighteen Treatments, by Special Delivery Mail, with one 5c glass syringe and needles, full directions and the service of our consulting department, for $50.00 complete.

We have many Illinois physicians among our satisfied patrons. *Wire or telephone when help is needed*

PASTEUR INSTITUTE of ST. LOUIS

R. B. H. GRADWOHL, M.D., Director **928 N. Grand Ave., St. Louis, Mo.**

Poor Laboratory Diagnosis

IS WORSE THAN NONE

It Breeds Confusion

Reliable Laboratory work requires more than ability. It demands an unusually large and expensive equipment. It demands sufficient patronage to assure an ever present source of unusual culture media and biological reagents.

THE CLINICAL LABORATORY
of
SWAN-MYERS COMPANY

Provides the highest type of pathological work because of its unlimited laboratory facilities and its staff of full and part time specialists who are experts in Pathology, Serology, Bacteriology, Physiological Chemistry and Pharmacology.

Autogenous Vaccines are made under the same careful system and safeguards which enable us to maintain our Government License.

You can depend upon Swan-Myers' Work. Prices are as low as is consistent with the most careful technic.

Wassermann Reaction..$5.00 **Tissue Diagnosis.....$5.00** **Autogenous Vaccine....$5.00**

SWAN-MYERS COMPANY, ***PHARMACEUTICAL and BIOLOGICAL LABORATORIES***
Indianapolis, Indiana, U. S. A.

MULFORD
FOR THE CONSERVATION OF LIFE
LABORATORIES

Mulford Antipneumococcic Serums

For the Specific Treatment of Lobar Pneumonia

Lobar pneumonia is caused chiefly by the pneumococcus, of which there are three different fixed types and a fourth group, including possibly twelve different types.

Types I and II are responsible for about 70 per cent of cases, with an average mortality, **without** serum treatment, of from **25 to 30 per cent. With** serum treatment the mortality of Type I has been reduced to from **5 to 8 per cent.**

Type III is responsible for from 10 to 15 per cent of cases, with a death rate of 50 per cent.

Group IV is responsible for from 15 to 20 per cent of cases. These usually follow a milder course, only 10 to 15 per cent resulting fatally.

Mulford Antipneumococcic Serum Polyvalent is highly protective against pneumonia caused by Type I, and contains antibodies against Types II and III.

The serum is tested and standardized by tests on mice; 1 c.c. must protect against 500,000 fatal doses of Type I cultures.

The polyvalent serum should be used immediately on diagnosis of lobar pneumonia where type determination is impossible.

The dose is from 50 to 100 mils (c.c.) intravenously, repeated about every six to eight hours until the patient successfully passes the crisis. Most cases will require 300 mils (c.c.) or more. It is safe to administer the serum intravenously in large and repeated doses. When the serum is injected intramuscularly, the results are slower and less effective.

Mulford Antipneumococcic Serums are furnished in packages containing syringes of 20 mils (c.c.) each, and in ampuls of 50 mils (c.c.) for intravenous injection.

Mulford Specific Agglutinating Pneumococcic Serums for laboratory diagnosis are furnished for each of the three types, in 10-mil (c.c.) ampuls sufficient for about 20 tests.

Mulford Pneumo-Serobacterin Mixed is an efficient prophylactic against lobar pneumonia. It is supplied in packages of four graduated syringes, A, B, C, D strength, and in syringes of D strength separately.

Syringe A 250 million killed sensitized bacteria
Syringe B 500 million killed sensitized bacteria
Syringe C 1000 million killed sensitized bacteria
Syringe D 2000 million killed sensitized bacteria

H. K. MULFORD CO., Philadelphia, U. S. A.

30533 **Manufacturing and Biological Chemists**

Literature sent on request with full laboratory tests

Cook County
Chas. B. Humiston, Pres.....Chicago
J. V. Fowler, Secy.....Chicago
Crawford County
A. G. Brooks, Pres.....Stoy
C. E. Price, Secy.....Robinson
DeKalb County
Clifford E. Smith, Pres.....De Kalb
L. E. Barton, Secy.....Malta
De Witt County
J. M. Wilcox, Pres.....Clinton
S. L. Thorpe, Secy.-Treas.....Clinton
Douglas County
Floyd C. Phillips, Pres.....Arthur
Walter C. Blaine, Secy.....Tuscola
Du Page County
(Affiliated with Cook County)
Edgar County
Wm. A. Buchanan, Pres.....Paris
George H. Hunt, Secy.....Paris
Edwards County
W. E. Buxton, Pres.....West Salem
R. L. Moter, Secy.....Albion
Effingham County
Frank W. Goodell, Pres.....Effingham
F. Buckmaster, Secy.....Effingham
Fayette County
L. L. Morey, Pres.....Vandalia
Mark Greer, Secy.....Vandalia
Franklin County
Wm. H. Smith, Pres.....Benton
Edgar Austin, Secy.....Benton
Fulton County
W. L. Crouch, Pres.....Fairview
D. S. Ray, Secy.....Cuba
Gallatin County
J. W. Bowling, Pres.....Shawneetown
A. B. Capel, Secy.....Shawneetown
Greene County
O. L. Edwards, Pres.....Roodhouse
L. O. Frech, Secy.-Treas.....White Hall
Grundy County
Roscoe Whitman, Pres.....Morris
F. C. Bowker, Secy.....Morris
(Continued on page 29)

The STORM Binder *and* Abdominal Supporter

PATENTED

SACRO—ILIAC BELT

No Whalebones. No Rubber Elastic.
Washable as Underwear

High and Low Operations, Hernia, Relaxed Sacro-iliac Articulations, Floating Kidney, Obesity, Pregnancy, Ptosis, Pertussis, etc.

Send for illustrated folder and Testimonials of Physicians.
Mail Orders filled within Twenty-four Hours.

KATHERINE L. STORM, M. D.
1541 Diamond St., PHILADELPHIA, PA.

50% Better Prevention Defense Indemnity

1. All claims or suits for alleged civil malpractice, error or mistake, for which our contract holder,
2. Or his estate is sued, whether the act or omission was his own
3. Or that of any other person (not necessarily an assistant or agent),
4. All such claims arising in suits involving the collection of professional fees,
5. All claims arising in autopsies, inquests and in the prescribing and handling of drugs and medicines.
6. Defense through the court of last resort and until all legal remedies are exhausted.
7. Without limit as to amount expended.
8. You have a voice in the selection of local counsel.
9. **If we lose, we pay to amount specified, in addition to the unlimited defense.**
10. The only contract containing all the above features and which is protection per se.

A Sample Upon Request

The MEDICAL PROTECTIVE COMPANY of Ft. Wayne, Indiana.

Professional Protection, Exclusively

A COMPLETE DIAGNOSTIC LABORATORY

WE MAKE EVERY LABORATORY TEST OF MERIT:

{ **WASSERMANN,** controlled by the
{ **HECHT-GRADWOHL,** the best test for syphilis.

GONORRHEAL BLOOD TEST. **TUBERCULOSIS BLOOD TEST.**

All other examinations, Urine, Feces, Stomach Contents, Sputum, Blood Films, Blood Cultures, Vaccines, Blood Chemical Test for Sugar, Urea, Uric Acid and Creatinine.

Write for Free CONTAINERS, SLIDES, CULTURE TUBES AND LITERATURE

GRADWOHL BIOLOGICAL LABORATORIES, 928 N. Grand Avenue, St. Louis, Mo.

R. B. H. GRADWOHL, M. D., Director

Quality Efficiency Uniformity

RHEUMATISM NEURALGIA SCIATICA TONSILLITIS LUMBAGO
HEAVY COLDS GRIPPE GOUT EXCESS OF URIC ACID

Tongaline Liquid

Four-ounce Bottle Eight-ounce Bottle Five-pint Bottle

Tongaline Tablets **Tongaline and Lithia Tablets**
Tongaline and Quinine Tablets

Box, Fifty Tablets Box, One Hundred Tablets

Samples on Application MELLIER DRUG COMPANY, Saint Louis

Send Your Specimens for Diagnosis

TO THE

Columbus Medical Laboratory

ESTABLISHED 1893

31 N. State Street - - Chicago, Illinois

WASSERMANN and other serum tests.
AUTOGENOUS VACCINES prepared.
TISSUE from surgical cases for diagnosis.
Urine, Sputum and Blood tests.
Post Mortem and Medico Legal Advice.
Water, Food and Drug Analyses.

Dr. Adolph Gerhrmann, Pres.

Central 2740 **Nights, Oakland 6938**

LISTERINE

A trustworthy, unirritating solution composed of volatile and non-volatile antiseptics; extensively and satisfactorily employed in dilution up to 25% as a wet dressing for surgical and accidental wounds.

LISTERINE

Suitably diluted, applied by injection, douche or spray, often serves a useful purpose in catarrhs and conditions involving hyper-secretion from mucous surfaces. It is an efficient deodorizer.

LISTERINE

On account of its boric and benzoic acid constituents, forms a suitable lotion in dermatitis following vaccination. In various cutaneous disorders, its use allays excessive itching or irritaton, and promotes cleanliness while exercising its antiseptic effect.

Descriptive literature on request

Lambert Pharmacal Company

Twenty-first and Locust Streets St. Louis, Mo., U. S. A.

RADIUM FOR RENT

BY

THE PHYSICIANS' RADIUM ASSOCIATION *of* CHICAGO

(Incorporated under the laws of Illinois: "Not for profit")

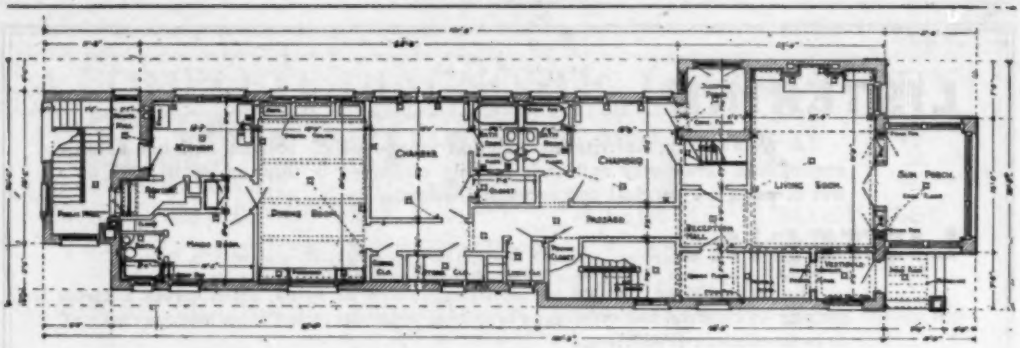
Any case, in which radium therapy is indicated, is provided for in our large assortment of radium applicators. Loaned on application from any responsible physician, case having first been passed on by us after receipt of adequate information. Certain cases may be sent to our office for treatment. Moderate rental fees charged. For further particulars address

THE PHYSICIANS' RADIUM ASSOCIATION

1104 Tower Bldg., 6 N. Michigan Ave.,

Telephones: Randolph 6897-6898 CHICAGO

Board of Directors: WILLIAM L. BAUM, M.D.; THOMAS J. WATKINS, M.D.; FREDERICK MENGE, M.D.; WALTER S. BARNES, M.D.; ALBERT WOELFEL, M.D. Managing Director: ALBERT WOELFEL, M.D.



First Floor Plan.

FOR RENT

On the North Shore

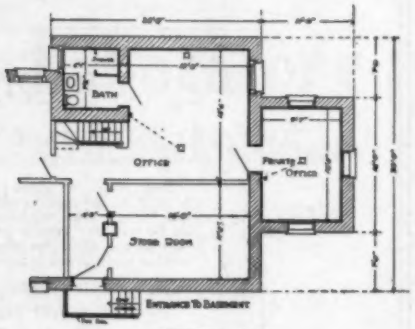
Splendid location for a Doctor. In the fastest growing section in Chicago.

6708 Sheridan Road

First Floor and Basement

In the heart of the LOYOLA District, 2 blocks north of the LOYOLA STATION of the Northwestern "L".

Express service to the Loop.



Basement Plan.

Description Three apartment building with large Doctor's office in basement, with outside entrance, and an inside stairway leading to 1st floor. Each apartment has six large rooms, including two tile baths with showers attached and a maid's bath.

OR WILL SELL

Investment Size of lot 35′ x 150′. Annual rental $3,240.00. Price $28,000.00
Size of building, 30′ x 119′8″. Encumbrance $13,000.00 at 5½%. Due 1922.

For further particulars address

E. F. LINDROOTH Telephone Majestic 7096 **1425 Marquette Bldg., Chicago**

HORMOTONE

The Dynamogenic Hormone Tonic for

Asthenic Conditions

Indications: Neurasthenia and all asthenic conditions; premature senility and the debilities of old age; menstrual disorders and climacteric disturbances; chronic cardiac cases with hypotension, circulatory stasis and cold extremities; convalescent and post-febrile weakness.

The Fatigue Syndrome Yields to
Hormotone as to No Other Agent

DOSE: *One or two tablets three times daily before meals*

In Neurasthenia associated with High Blood Pressure use

HORMOTONE WITHOUT PITUITARY

G. W. CARNRICK CO., 31 Sullivan Street, NEW YORK

AIDS IN DIAGNOSIS

Wassermann Test (Blood and Spinal Fluid)	$5.00
Complement Fixation Test (Gonorrhea, Tuberculosis, Etc.)	5.00
Abderhalden Test—Pregnancy	5.00
Tissue Pathological Examination	5.00
Autogenous Vaccines	5.00
Smears, Sputa, Etc.	1.00
Urinalysis	1.50
Spirochaete, Examination by Dark Field Illuminator	3.00
Agglutination Test for Blood Transfusion	5.00

Send for Containers and Instruction Book

Our names and reputations stand back of our work.
Established 1904

CHICAGO LABORATORY

PHONE RANDOLPH 3610
25 E. WASHINGTON ST. CHICAGO, ILL.

Ralph W. Webster, M. D., Ph. D., Chemical Dept.
Thomas L. Dagg, M. D., Pathological Dept. C. Churchill Croy, M. D., Bacteriological Dept.

From Mother Earth, from farm
and furrowed field,
Each brings his share of Nature's
bounteous yield."

OVALTINE

is manufactured from wholesome farm products ***barley malt, milk*** and ***eggs*** exquisitely flavored with the purest ***cocoa.***

Issued in the form of readily soluble granules, easily digested, completely assimilated, palatable, and economical.

The food in convalescence

A Complete
Food Beverage

For samples and complete analysis, write to
THE WANDER COMPANY, Dept. 4, 23 N. Franklin St., CHICAGO
Established 1865 by Dr. A. Wander Co., Ltd., Berne, Switzerland. Ovaltine is used by leading European physicians and dietitians, also in recuperating bases of allied armies.

CALCREOSE

The therapeutic value of creosote is well known and has long been recognized. Its use has been neglected largely because of the difficulties of administration. Calcreose, a chemical combination of creosote and calcium (contains **50%** creosote) overcomes many of the objections.

Calcreose is of value in the treatment of bronchitis, especially the bronchitis associated with pulmonary tuberculosis, and in gastro-intestinal infections.

Calcreose has been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in "New and Non-official Remedies."

Formulae and Price List

Calcreose Powder. A reddish brown powder, containing 50 per cent creosote in combination with calcium **Per Pound, $3.00**

Calcreose Tablets, coated brown, 4 grs., **100, 40c; 500, $1.60; 1,000, $3.00**

Calcreose is carried in stock by wholesale druggists; also supplied to physicians direct. We ship charges prepaid. Literature and samples free to physicians.

As high as 120 grains of Calcreose has been given daily without digestive disturbance.

THE MALTBIE CHEMICAL CO
PHARMACEUTICAL CHEMISTS
NEWARK NEW JERSEY

Chloretone

A broadly serviceable hypnotic and sedative

Chloretone induces natural sleep.

It acts as a sedative to the cerebral, gastric and vomiting centers.

It does not depress the heart.

It does not disturb the digestive functions.

It produces no objectionable after-effects.

It does not cause habit-formation.

INDICATIONS.

Insomnia of pain.
Insomnia of mental strain or worry.
Insomnia of nervous diseases.
Insomnia of old age.
Insomnia of tuberculosis.
Alcoholism, delerium tremens, etc.
Acute mania.
Puerperal mania.
Periodic mania.
Senile dementia.
Agitated melancholia.
Motor excitement of general paresis.
Spasmodic affections, as asthma, epilepsy, chorea, pertussis, tetanus, etc.
Nausea and vomiting of anesthesia.
Seasickness.
The pains of pregnancy.
Vomiting of pregnancy.

Chloretone has been pronounced the most satisfactory hypnotic and sedative available to the medical profession.

CHLORETONE: Ounce vials.
CHLORETONE CAPSULES: 3-grain, bottles of 100 and 500.
CHLORETONE CAPSULES: 5-grain, bottles of 100 and 500.
Dose, 3 to 15 grains.

Home Offices and Laboratories,
Detroit, Michigan.

Parke, Davis & Co.

50 Years of Pharmaceutical Progress

FELLOWS' SYRUP

Differs from other preparations of the Hypophosphites. Leading Clinicians in all parts of the world have recognized this important fact. HAVE YOU?

TO INSURE RESULTS,

Prescribe the Genuine

℞ Syr. Hypophos. Comp. FELLOWS'

REJECT < Cheap and Inefficient Substitutes
Preparations "Just as Good"

THE FELLOWS MEDICAL MANFG. CO. LTD. 26 CHRISTOPHER ST. NEW YORK

TUBERCULOSIS - ALBUQUERQUE, NEW MEXICO

Climatic Conditions Unsurpassed
Altitude 5000 feet
In the LAND OF SUNSHINE

Experienced Medical Supervision
Trained Nurses in Constant Attendance
All Approved Theraputic Measures Employed

The Murphey Sanatorium

A High-Class Institution for the Treatment of Tuberculosis.
Forty Rooms—Ten with private bath—Thirty with bath between each two rooms.
Every Room has a Private Sleeping Porch.
Located in the midst of beautiful Mountain Scenery.

Rates: $18.50 to $25.00 per week
NO EXTRAS

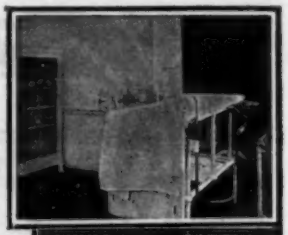
DESCRIPTIVE BOOKLET AND FULL INFORMATION MAILED ON REQUEST

THE MURPHEY SANATORIUM, Albuquerque, New Mexico

W. T. MURPHEY, M. D., MEDICAL DIRECTOR
MRS. HATTIE SOWER, SUP'T.
DAVID A. SPEAR, M. D. BACTERIOLOGIST

THE OTTAWA TUBERCULOSIS COLONY

OTTAWA, ILL.



is devoid of the "institutional atmosphere." It is designed and conducted to meet the requirements of patients who demand

Privacy and Individual Attention

Special consideration is given to Quality of Service

Rates $25.00 to $35.00 per week

H. V. PETTIT, Supt.

OTTAWA ILLINOIS

Chicago Fresh Air Hospital

(FOR TUBERCULOSIS)

At Rogers Park, Chicago, Illinois

Patients received in *all* stages of Pulmonary Consumption.
Private Rooms and Board, $25.00 per week.
Open Porch and two-bed Rooms, with Board, $15.00.

Tuberculin Treatment
Artificial Pneumo-Thorax

DR. ETHAN A. GRAY,
Medical Superintendent.

THE POTTENGER SANATORIUM

MONROVIA, CALIFORNIA

FOR DISEASES OF THE LUNGS AND THROAT

A thoroughly equipped institution for the scientific treatment of tuberculosis. High class accommodations. Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery, 45 minutes from Los Angeles.

F. M. POTTENGER, A.M., M.D. LL.D., Medical Director.
J. E. POTTENGER, A.B., M.D., Assistant Medical Director and Chief of Laboratory.
GEORGE H. EVANS, M.D. San Francisco, Medical Consultant.

For Particulars, Address THE POTTENGER SANATORIUM, Monrovia, California

LOS ANGELES OFFICE, 1100-1101 TITLE INSURANCE BUILDING, FIFTH AND SPRING STREETS

EDWARD SANATORIUM

For the Treatment of Incipient Pulmonary Tuberculosis

NAPERVILLE, ILLINOIS

Established 1907. Attractive surroundings. Large grounds. Open-air sleeping cottages and Infirmary with all appointments necessary for the comfort of the patients.

Modern hygienic-dietetic methods of treatment. Medical and laboratory facilities. Resident physicians and trained nurses.

Tuberculin Treatment and Artificial Pneumothorax in suitable cases

For detailed information, rates and rules of admission, apply to

CHICAGO TUBERCULOSIS INSTITUTE, 8 South Dearborn Street, Room 1212, CHICAGO, ILL.

On Main Line Chicago, Milwaukee & St. Paul Railway
30 Miles West of Milwaukee

Oconomowoc Health Resort

OCONOMOWOC, WISCONSIN

For Nervous and Mild Mental Diseases

Building New, Most Approved Fireproof Construction

ARTHUR W. ROGERS, M.D., Resident Physician in Charge

LONG DISTANCE TELEPHONE

Built and equipped to supply the demand of the neurasthenic, borderline and undisturbed mental case for a high class home free from contact with the palpable insane, and devoid of the institutional atmosphere. Forty-one acres of natural park in the heart of the famous Wisconsin Lake Resort Region. Rural environment, yet readily accessible. The new building has been designed to encompass every requirement of modern sanitarium construction, the comfort and welfare of the patient having been provided for in every respect. The bath department is unusually complete and up-to-date. Number of patients limited, assuring the personal attention of the resident physician in charge.

Trains met at Oconomowoc on request.

The Norbury Sanatorium

JACKSONVILLE -:- ILLINOIS

Established by Dr. Frank P. Norbury, 1901

Incorporated and Licensed

"Maplewood" — "Maplecrest"

Capacity Forty Beds

PRIVATE RESIDENTIAL HOMES for the treatment of Nervous and Mental Disorders. Especial attention given to the treatment, by approved modern methods, of the Psychoneuroses, Exhaustion states and selected Psychoses and addiction cases.

Dr. FRANK P. NORBURY, Medical Director. (Late Alienist, State Board of Administration. Formerly Supt. Kankakee State Hospital.)

DR. ALBERT H. DOLLEAR Superintendent (Late Clinical Asst., State Psychopathic Institute, Kankakee, Formerly Asst. Supt., Watertown State Hospital.)

Address all communications, THE NORBURY SANATORIUM, 606 South Daimond Street, JACKSONVILLE, ILLINOIS
Springfield Office, DR. FRANK P. NORBURY, 407 South Seventh Street, by appointment

Kenilworth Sanitarium

(Established 1905)

KENILWORTH, ILLINOIS
(C. & N.-W. Railway. Six miles north of Chicago)

Built and equipped for the treatment of nervous and mental diseases. Approved diagnostic and therapeutic methods. An adequate night nursing service maintained. Sound proof rooms with forced ventilation. Elegant appointments. Bath rooms en suite, steam heating, electric lighting, electric elevator.

Resident Medical Staff
Ella Blackburn, M. D., Sherman Brown, M. D.
Sanger Brown, M. D.,
Chicago Office: 59 East Madison Street
Telephone: Randolph 5794. Consultation by appointment only

All correspondence should be addressed to Kenilworth Sanitarium, Kenilworth, Illinois

Established 1867

BELLEVUE SANITARIUM

BATAVIA, ILLINOIS
near CHICAGO

For Nervous and Mental Diseases of Women Only

Restful, homelike and accessible. Treatment modern, scientific and ethical.

TERMS MODERATE. *WRITE FOR BOOKLET*

Nasal Spraying Outdone

The V-E-M Applicator—
a hard rubber attachment that screws onto the collapsible tube "shoots" *ointment* up into the nose, where it stays for *hours*. Sprayed fluids quickly run down and out. This slick little device insures most effective local medication in

Coryza, Rhinitis
Catarrh, Hay Fever

Free with every tube of
V-E-M Ung. Eucalyptol Compound
Send 10 cents for a tube of V-E-M and the Applicator (regular price 50 cents)

Schoonmaker Laboratories, Inc. 70 East 42nd St. New York

Buy from our advertisers. If they don't give as good or better value than others, kick to us—

We'll do the rest

BUILDING ABSOLUTELY FIRE-PROOF

Waukesha Springs Sanitarium

FOR THE CARE AND TREATMENT OF

NERVOUS DISEASES

BYRON M. CAPLES, M.D., Superintendent

Waukesha :: Wisconsin

NEURONHURST

Dr. W. B. Fletcher's Sanatorium

For Treatment of Mental and Nervous Diseases, Including Legally Committed and Voluntary Cases

Well equipped with all facilities for the care and treatment of all forms of mental and nervous diseases, inebriety, drug addiction and those requiring recuperation and rest. Gynecological department is in charge of skilled women physicians. All approved forms of Hydrotherapy, Balneotherapy, Massage, Swedish Movements, etc. All forms of Electrical Treatments. Phototherapy, High Frequency and X-Ray work. A strictly ethical institution. Correspondence with physicians invited. For particulars and terms, address:

DR. MARY A. SPINK, Superintendent. Long Distance Telephones **1140 E. Market St., INDIANAPOLIS**

DR. SIDNEY D. WILGUS

Retiring Superintendent of Kankakee State Hospital, also former Superintendent of Elgin State Hospital,

Begs to Announce

that he has purchased a Sanitarium at Rockford, Ill. (The Ransom)

and is prepared to give personal care and attention to **mental and nervous cases and drug addictions.** Modern features having been added, the equipment is qualified to give up-to-date treatment. Also tennis, croquet, boating, and other out-door exercises are prescribed. A nine-hole golf course is near by. Correspondence solicited, or, to save time, telephone: Long Distance, Rockford 3767, and reverse the charges. On request patients are met at any train with an automobile.

Mail address, DR. SIDNEY D. WILGUS, Box 304, Rockford, Ill.

Chicago Office. Thursday Mornings until 12 at Suite 1603, 25 E. Washington St. And by appointment

ENTRANCE WEST HOUSE OFFICE AND BATH HOUSE PSYCHOPATHIC HOSPITAL GYMNASIUM

Established In 1884

THE MILWAUKEE SANITARIUM

Wauwatosa, Wis.

For Mental and Nervous Diseases

Located at Wauwatosa (a suburb of Milwaukee) on C., M. & St. P. Ry., 2½ hours from Chicago, 15 minutes from Milwaukee, 5 minutes from all cars. Two lines street cars. Complete facilities and equipment as heretofore announced. ¶ Psychopathic Hospital: Continuous baths, fireproof building, separate grounds. ¶ West House: Rooms en suite with private baths. ¶ Gymnasium and Recreation Building: Physical culture, "Zander" machines, shower baths. ¶ Modern Bath House: Hydrotherapy, Electrotherapy, Mechanotherapy. ¶ 50 acres beautiful hill, forest and lawn. Five houses. Individual treatment. Descriptive booklet will be sent upon application.

RICHARD DEWEY, A. M., M. D. **EUGENE CHANEY, A. M., M. D.** **WILLIAM T. KRADWELL, M. D.**

CHICAGO OFFICE: Marshall Field Annex, 25 E. Washington Street, Room 1603. Wednesdays 1 to 3 P. M. (except in July and August) Tel. Centra 1769
MILWAUKEE OFFICE: Goldsmith Building, Room 304. Consultation by appointment. Tel. Main 81.
TELEPHONE SANITARIUM OFFICE: Milwaukee—Wauwatosa 16.

The Cincinnati Sanitarium

For Mental and Nervous Diseases

Incorporated 1873

A strictly modern hospital fully equipped for the scientific treatment of nervous and mental affections. Situation retired and accessible. For details write for descriptive pamphlet.

F. W. Langdon, M. D., Medical Director **B. A. Williams, M. D., Resident Physician**
Emerson A. North, M. D., Resident Physician

H. P. COLLINS, Business Manager, Box No. 4, College Hill, Cincinnati, Ohio

ABSOLUTELY FIREPROOF BUILDING

LESS THAN THREE HOURS FROM CHICAGO

Mud Baths

For the treatment of RHEUMATISM, Nervousness, Kidney, Liver and Skin Diseases, and all ailments requiring elimination and relaxation. Location beautiful; climate healthful; 80 acres of private grounds.

DR. E. P. ALLEN, Medical Director

Correspondence with physicians solicited

For rates, literature and reservations, address

Waukesha Moor (Mud) Bath Co.
WAUKESHA, WISCONSIN

"BEVERLY FARM"

Home and School for Nervous and Backward Children

5 buildings, schools and gymnasium, 176 acres of land, 40 acres of timber, containing beautiful Camp Belle log cabin for recreation; separate buildings for boys and also children under 10 years of age. Thirty-six years experience. Consultations at home if desired. Publicity avoided. Address all communications to

W. H. C. SMITH, M. D., Superintendent
GODFREY, MADISON CO., ILLINOIS

"Beverly Farm" was awarded Grand Prize by Committee of Awards of the Louisiana Purchase Exposition

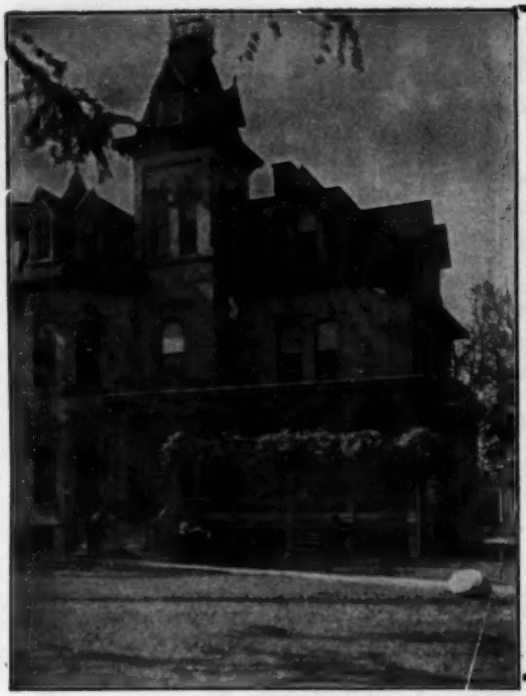
The Peoria Mud Baths

We insist that your patients can eliminate as freely and as effectually in Illinois as in any other State in the Union.

Strict ethical relations. Thoroughly equipped. Have had thousands of patients.

DR. T. W. GILLESPIE, Medical Supt.

SULPHUR SPRINGS SANITARIUM
215-217 N. Adams St. Peoria, Illinois



DR. WEIRICK'S SANITARIUM

FORMERLY DR. BROUGHTON'S SANITARIUM
ESTABLISHED IN 1901

For Opium, Morphine Cocaine and Other Drug Addictions, Including Alcohol and Special Nervous Cases

Methods easy, regular, humane. Good heat, light, water, help, board, etc. Number limited to 44. A well kept home. Nervous-Mental Department in charge of Dr. W. L. Ransom. Address

DR. G. A. WEIRICK
SUPERINTENDENT
2007 South Main Street
Phone 536
Rockford - - - Illinois

PETTEY & WALLACE SANITARIUM
958 S. Fifth Street
MEMPHIS, TENN.

FOR THE TREATMENT OF
Drug Addiction, Alcoholism, Mental and Nervous Diseases

A quiet, home-like, private, high-class institution. Licensed. Strictly ethical. Complete equipment. Best accommodations.

Resident physician and trained nurses.

Drug patients treated by Dr. Pettey's original method.

Detached building for mental patients.

The Peoria Sanatorium

A private Sanatorium for the treatment of Nervous and Mental Diseases, by modern methods. Flowing Sulphur Spring. Licensed by the State.

DRUG AND LIQUOR HABITS TREATED
WRITE FOR BOOKLET

Director, DR. GEO. W. MICHELL

PHONE MAIN 225. **Address, 106 N. Glen Oak, PEORIA, ILL.**

VICTOR

Accepted by Medical Department of U. S. Government for "cantonment" hospitals and elsewhere as required.

220 volts, A. C. $1025.00
220 volts, D. C. $1300.00
(F. O. B. Chicago)

Another "Victor" Accomplishment
—the Victor "New Universal" Roentgen Apparatus

Point for point and dollar for dollar, it epitomizes "next to the last word" in the Victor ideal of a modern roentgen generator

SPECIFICATIONS

DESIGN—Closed core and single disk.
CAPACITY—10 kilowatt.
SPARK LENGTH—10 inches.
CONTROL—Auto transformer or resistance—singly or in combination, as preferred.
SWITCHBOARD—Attached to either end of cabinet or separately mounted.

Complete details are given in Victor Bulletin 207, which will be gladly sent on request—and without obligation

VICTOR ELECTRIC CORPORATION

CHICAGO
236 S. Robey St.

CAMBRIDGE, MASS.
66 Broadway

NEW YORK
131 E. 23rd St.

Territorial Sales Distributors:

CHICAGO: Victor Electric Corporation, 236 S. Robey St.
CHICAGO: John McIntosh Co., 30 E. Randolph St.
ST. LOUIS, MO.: John McIntosh Co., 4485 Olive St.

"I Use Ergotole in Dysmenorrhea"

in one fldrm doses in hot water

every hour for three doses—then at four-hour intervals if necessary (which seldom happens), and my cases get through the period with comparative comfort and with but little pain."

That's the gist of a recently received report

Sharp & Dohme

Purveyors to Particular Prescribers Since 1860

Are YOU using "Every Doctor's Ergot" in that way? If not, there's a sample waiting for you in Baltimore.

The Standard Laboratories

MANUFACTURING PHARMACISTS

QUALITY, SERVICE and PRICE of drugs are necessary to success in the practice of medicine. ¶Our products are manufactured from the purest drugs and chemicals obtainable, under the most skillful supervision, and the service is prompt. Our prices are the lowest consistent with quality.

YOUR ORDERS SOLICITED

2626-2628 Shields Avenue - CHICAGO, ILL.

Phone Calumet 6090

RADIUM THERAPY

UTERINE HEMORRHAGES

Malignant and Benign Growths
TREATED WITH RADIUM

Perfected Mechanical Devices for the Scientific Application to Bladder, Rectum, Oesophagus, Throat and Post-nasal Space.

REFERRED CASES WILL REMAIN UNDER THE GENERAL SUPERVISION OF THE ATTENDING PHYSICIAN

C. W. HANFORD, M. D.

Room 1010
Columbus Memorial Building
31 NO. STATE STREET

Phone MAJESTIC **7330**
HOURS: 9 A. M. to 12 M.
Afternoons by Appointment

PRESCRIPTION SERVICE THAT SATISFIES

The service that firmly holds customers and constantly attracts new ones, is SERVICE that SATISFIES.

The facilities of

THE WHITE-HAINES OPTICAL CO.

are equal to the severest test.

ACCURACY is our first consideration.
Prompt Deliveries consistent with accuracy is our second consideration.
Our ability to handle a large volume of work promptly is worthy of your consideration.
We are Headquarters for Punktals, Kryptoks, Ultex one-piece, Naktic and Korectal (Trade Mark Reg.) lenses.

Try our "SERVICE THAT SATISFIES"

THE WHITE-HAINES OPTICAL CO.

COLUMBUS, O. INDIANAPOLIS, IND. SPRINGFIELD, ILL.

Hamilton County
E. S. Hall, Pres.....McLeansboro
P. M. Nation, Secy.....McLeansboro
Hancock County
Blair Kelley, Pres.....Ferris
S. M. Parr, Secy.....Carthage
Hardin County
W. J. J. Paris, Pres.....Rosiclare
F. A. Jones, Secy.....Rosiclare
Henderson County
C. E. Kaufman, Pres.....Oquawka
J. P. Riggs, Secy-Treas.....Media
Henry County
H. N. Heflin, Pres.....Kewanee
P. J. McDermott, Secy.....Kewanee
Iroquois-Ford District
O. O. Hall, Pres.....Milford
W. L. Cottingham, Secy.....Paxton
Jackson County
W. A. Brandon, Pres.....Carbondale
H. G. Horstman, Secy.....Murphysboro
Jasper County
John Hamilton, Pres.....Bogota
James P. Prestley, Secy.-Treas.....Newton
Jefferson County
E. E. Edmondson, Pres.....Mt. Vernon
Andy Hall, Secy.....Mt. Vernon
Jersey County
H. R. Bohannan, Pres.....Jerseyville
H. F. Threkeld, Secy.....Jerseyville
Jo Daviess County
U. S. G. Keller, Pres.....Warren
T. J. Stafford, Secy.....Stockton
Johnson County
C. D. Nobles, Pres.....Buncome
H. W. Walker, Secy.....Grantsburg
Kane County
A. E. Diller, Pres.....Aurora
L. J. Hughes, Secy.-Treas.....Elgin
Kankakee County
C. W. Geiger, Pres.....Kankakee
E. S. Hamilton, Secy.-Treas.....Kankakee
Kendall County
R. A. Schaefer, Pres.....Plano
Robt. McClelland, Secy.....Yorkville

Knox County
A. C. Keener, Pres.....Altoona
G. S. Bower, Secy.....Galesburg
Lake County
J. M. Palmer, Pres.....Grays Lake
C. S. Ambrose, Secy.-Treas.....Waukegan
La Salle County
Geo. K. Wilson, Pres.....Streator
E. E. Perisho, Secy.....Streator
Lawrence County
H. V. Davis, Pres.....Lawrenceville
F. F. Petty, Secy.....Lawrenceville
Lee County
E. B. Owens, Pres.....Dixon
C. G. Poole, Secy.....Compton
Livingston County
E. G. Beatty, Pres.....Pontiac
John Ross, Secy.....Pontiac
Logan County
W. W. Coleman, Pres.....Lincoln
H. S. Oyler, Secy.....Lincoln
McDonough County
E. R. Miner, Pres.....Macomb
Geo. S. Duntley, Secy.....Bushnell
McHenry County
N. L. Seelye, Pres.....Harvard
Hyde West, Secy.....Woodstock
McLean County
Frank C. Fisher, Pres.....Bloomington
Bernice Curry, Secy.....Bloomington
Macon County
F. J. Mittan, Pres.....Decatur
C. E. Hildreth, Secy.....Decatur
Macoupin County
G. E. Hill, Pres.....Girard
T. D. Doan, Secy.....Scottville
Madison County
J. Barnard Hastings.....Alton
E. W. Fiegenbaum, Secy.....Edwardsville

(*Continued on page 32*)

Chicago Eye, Ear, Nose and Throat College

A Post-Graduate School for Practitioners of Medicine

235 W. Washington Street
Chicago, Ill.

Catalogue on Application

Chicago Maternity Hospital and Training School for Nurses

ACCOMMODATES 25 PATIENTS
RATES: $10.00 to $25.00 PER WEEK

Well infants cared for in nursery for $5.00 per week.
Training School for Obstetrical and Infants' nurses.

Address
EFFA V. DAVIS, M.D., 2314 N. Clark St., Chicago

Home Training In Nursing

We offer a thorough extension course to beginners and also to practical nurses wishing to perfect themselves in the theory and science of nursing.

There is in every community a demand for competent nurses — women physically qualified and possessing natural ability, who for various reasons cannot leave home to get their training. Through the aid of the very thorough system of instruction used by this school for a period of sixteen years, we have trained hundreds of women who have "made good" as practical nurses. In fact our graduates adapt themselves to the inconveniences of private nursing more readily than the hospital-trained nurse. They are loyal to the home doctor, whose co-operation has made their success possible.

Reputable physicians are invited to investigate our methods and co-operate with us by sending the names of ea. ..est women who in their estimation would make desirable applica'ns.

Tuition fees very reasonable—small payment plan. Write for the Sixteenth Annual Announcement. Address

Karen Esmann, Registrar
CHICAGO SCHOOL OF NURSING
116 S. Michigan Blvd., Chicago, Ill.

Coöperative Malpractice Insurance

Limited to Members of Recognized Medical Societies

Group Form Plan—

originated and issued only by Ætna Life Insurance Company to provide real protection and service on a common sense basis.

This Means Protection—

against loss arising from claims based upon any injury to a patient occurring in the lawful practice of the Assured's profession. No limitation on reason for making claim.

Avoids Technicalities—

furnishes complete defense; also indemnity, $5,000 for one injury; $15,000 total all judgments account of each year's acts.

Ætna Attorneys—

(Specialists in personal injury claims) always available to Assured both before and after claim is made, without extra charge.

Compromises—

the Ætna prefers to defend suit to the highest court. Cannot settle without consent of Assured and approval of three members of the Group.

Appeal Bonds Furnished—

If necessary in defending suit (up to limit specified in policy) without cost or deposit of collateral—a radical departure of real value to the Assured.

ABSOLUTE SECURITY **SURPLUS TO POLICYHOLDERS, $18,985,333.30**

ÆTNA-IZE

Write or phone Ætna Life Insurance Company, Local Agent, or
George Tramel, Manager, Insurance Exchange Building, Chicago, Illinois

Preparedness is the Slogan of the Day. We are Prepared

to furnish promptly to the specialist in every branch of surgery the correct instrument and apparatus which are of such great assistance in the performance of the Surgeon's work

V. MUELLER & CO., Makers of Surgeons' Instruments, Hospital and Office Equipment **1771-1781 Ogden Ave., CHICAGO**

INDEX TO ADVERTISERS

Abbott Laboratories..... 7
Aetna Life Insurance Co..... 30

Bayer Company..... 8
Bellevue Sanitarium..... 33
Beverly Farm School..... 24

Carnrick, G. W., Co..... 15
Chicago College of Medicine and Surgery..... 29
Chicago Eye, Nose & Throat College..... 29
Chicago Fresh Air Hospital..... 30
Chicago Laboratory..... 15
Chicago Maternity Hospital..... 29
Chicago Pasteur Institute..... 9
Chicago School of Nursing..... 29
Cincinnati Sanitarium..... 24
College of Medicine, Univ. of Ill.....
Columbus Medical Laboratory..... 12
Crittenton, Chas. N., Co.....

Edward Sanatorium..... 21

Fellows Medical Mfg. Co..... 19
Fletcher's Sanatorium..... 33

Gradwohl Biological Laboratories..... 12

Hanford, Dr. C. W..... 28
Horlick's Malted Milk Co..... 2

Kenilworth Sanitarium..... 33

Laboratory of Pathology and Bacteriology..... 2
Lambert Pharmaceutical Company..... 13
Lederle Antitoxin Laboratory..... 35
Leuzarder & Co..... 26

Lindrooth, E. F..... 14
Maltbie Chemical Co..... 17
McIntosh, John, Co..... 11
Medical Protective Co..... 11
Mead, Johnson & Co..... 4
Mellier Drug Co..... 9
Mellin's Food Co..... 6
Milwaukee Sanitarium..... 23
Mosby Co., C. V..... 36

Mueller & Co., V..... 30
Mulford, H. K., Co..... 10
Murphey Sanatorium..... 19

Norbury Sanitarium..... 21

Oconomowoc Health Resort..... 21
Ottawa Tuberculosis Colony..... 20

Parke, Davis & Co..... 13
Pasteur Institute of St. Louis..... 9
Pennoyer Sanitarium..... 6
Peoria Mud Baths..... 24
Peoria Sanatorium..... 25
Petey & Wallace's Sanitarium..... 25
Phillips Co., Chas. H..... 32
Physicians' Radium Association..... 13
Pine Sanatorium..... 24
Pitman-Moore Co..... 4
Pottenger Sanatorium..... 20
Purdue, Frederick, Co..... 8
Pure Gluten Food Co..... 5
Quaker Oats Co..... 5, 33

Radium Institute..... 26
Ransom Sanitarium..... 23

Saunders Co., W. B..... front cover
Schoonmaker Laboratories..... 22
Searle & Co., G. D..... 6
Sharp & Dohme..... 27
Sherman, G. H., M. D..... 5
Standard Laboratories..... 27
Standard Oil Co..... 3
Storm, Katherine L., M. D..... 11
Swan-Myers Co..... 9

Tilden Co., The..... 6
Victor Electric Co..... 26

Wander, Dr. A..... 16
Waukesha Moor (Mud) Bath Co..... 24
Waukesha Springs Sanitarium..... 23
Waukesha Pure Food Co.....
Weirick's Sanitarium..... 25
White-Haines Optical Co..... 28

BUYER'S INDEX

ABDOMINAL SUPPORTERS

Storm, Katherine L., M. D..... 11

AUTOMOBILES, ETC.

Standard Oil Co..... 3

FOOD

Horlick's Malted Milk Co..... 2
Mead, Johnson & Co..... 4
Mellin's Food Co..... 6
Pure Gluten Food Co..... 5
Quaker Oats..... 5, 33
Wander's Ovaltine..... 16
Waukesha Pure Food Co..... 30

HOSPITAL

Chicago Fresh Air Hospital..... 30
Chicago Maternity Hospital..... 29

INVESTMENTS AND INSURANCE

Aetna Life Insurance Co..... 30
Medical Protective Co..... 11

LABORATORY

Abbott Laboratories..... 7
Chicago Laboratory..... 15
Columbus Medical Laboratory..... 12
Gradwohl Biological Laboratories..... 12
Laboratory of Pathology and Bacteriology..... 2
Schoonmaker Laboratories..... 22
Standard Laboratories..... 27
Swan-Myers Co..... 16

MEDICAL BOOK PUBLISHERS

Saunders Co., W. B..... front cover
Mosby Co., C. V..... 36

MEDICAL SCHOOLS

Chicago College of Medicine and Surgery..... 29
Chicago Eye, Ear, Nose and Throat College..... 29
College of Medicine, Univ. of Ill.....

MUD BATHS

Peoria Mud Baths..... 24
Waukesha Moor (Mud) Bath Co..... 24

NURSES

Chicago School of Nursing..... 29

PHARMACEUTICALS

Abbott Laboratories..... 7
Bayer Company..... 8
Carnrick, G. W., Co..... 15
Crittenton, Chas. N., Co.....
Fellows Medical Mfg. Co..... 19
Hanford, Dr. C. W..... 28
Kenilworth Sanitarium..... 33
Lederle Antitoxin Laboratory..... 35
Lambert Pharmacal Company..... 13
Maltbie Chemical Co..... 17
Mead, Johnson & Co..... 4
Mellier Drug Co.....
Mulford, H. K., Co..... 10

Parke, Davis & Co..... 13
Phillips Co., Chas. H..... 32
Pitman-Moore Co..... 4
Purdue, Frederick, Co..... 8
Sherman's Bacterins..... 5
Searle & Co., G. D..... 6
Sharp & Dohme..... 27
Swan-Myers Co..... 9
Tilden Co., The..... 6

SANATORIA & SANITARIA

Bellevue Sanitarium..... 33
Cincinnati Sanitarium..... 24
Edward Sanatorium..... 21
Fletcher's Sanatorium..... 33
Kenilworth Sanitarium..... 33
Norbury Sanitarium..... 21
Milwaukee Sanitarium..... 23
Murphey Sanatorium..... 19
Oconomowoc Health Resort..... 21
Ottawa Tuberculosis Colony..... 20

Pennoyer Sanitarium..... 6
Peoria Sanitarium..... 25
Pettey & Wallace's Sanitarium..... 25
Pine Sanatorium..... 24
Pottenger Sanatorium..... 20
Radium Institute..... 26
Ransom Sanitarium..... 23
Waukesha Springs Sanitarium..... 23
Weirick's Sanitarium..... 25

SURGICAL INSTRUMENTS

McIntosh, John, Co..... 11
Mueller & Co., V..... 30
Victor Electric Co..... 26

IN PLACE OF OTHER ALKALIES USE

Phillips' Milk of Magnesia

"THE PERFECT ANTACID"

For Correcting Hyperacid Conditions—Local or Systemic. Vehicle for Salicylates, Iodides, Balsams, Etc.

Of Advantage in Neutralizing the Acid of Cows' Milk for Infant and Invalid feeding.

Phillips' Phospho-Muriate of Quinine

Compound

NON-ALCOHOLIC TONIC AND RECONSTRUCTIVE

With Marked Beneficial Action Upon the Nervous System. To be relied Upon Where a Deficiency of the Phosphates is Evident.

THE CHAS. H. PHILLIPS CHEMICAL CO.

NEW YORK LONDON

Marion County
W. W. Murfin, Pres.....Patoka
J. M. Gambill, Secy.....Centralia
Marshall-Putnam County
R. R. Eddington, Pres.....Lacon
R. L. Eddington, Secy.....Lacon
Mason County
H. O. Rogier, Pres.....Mason City
W. R. Grant, Secy.....Easton
Massac County
J. A. Orr, Pres.....Metropolis
J. A. Helm, Secy.....Metropolis
Menard County
H. E. Wilkins, Pres.....Petersburg
H. P. Moulton, Secy.....Petersburg
Mercer County
C. M. Murrell, Pres.....Mathersville
A. N. Mackey, Secy.....Aledo

Monroe County
S. Kohlenbach, Pres.....Columbia
L. Adelsberger, Secy.....Waterloo
Montgomery County
C. H. Lockhart, Pres.....Witt
G. W. Cox, Secy.....Litchfield
Morgan County
G. R. Bradley, Pres.....Jacksonville
W. L. Frank, Secy.....Jacksonville
Moultrie County
C. W. Taylor, Pres.....Bethany
O. M. Williamson, Secy.....Sullivan
Ogle County
A. H. Beebe, Pres.....Stillman Valley
J. T. Kretsinger, Secy.....Leaf River
Peoria City Medical Society
O. B. Will, Pres.....Peoria
Hugh Cooper, Secy.-Treas.....Peoria

(Continued on page 33)

CONTENTS—Continued

EDITORIAL

American Red Cross 421
Medical Pioneers of Kentucky 422
Resolutions of Clinical Congress 422
Firms Licensed to Make Drugs Patented in Germany 423
Military Training at Age of Nineteen 423
Baby's Milk and War Prices 424
Tuberculosis, American Review of 424

CORRESPONDENCE

Medical Reserve Corps 425

PUBLIC HEALTH

Venereal Disease Rules 425
Antitoxin Distribution, Rules 426
Poliomyelitis, State Clinics and After-Care 427
State Diagnostic Laboratories 427
Tuberculosis—Down-State Clinical Conference 427
Communicable Diseases in Illinois 428

SOCIETY PROCEEDINGS

Alexander County 428
Cook County:
Chicago Medical Society 428
Chicago Laryngological and Otological Society 429
Chicago Ophthalmological Society 430
Greene County 432
Henderson County 433
Montgomery County 433
Tri-State District Medical Society 433
Personals 437
News Items 438
Marriages 439
Deaths 439
Book Notices 440

Perry County
J. S. Templeton, Pres.....Pickneyville
J. D. Byrne, Secy.....Du Quoin

Piatt County
J. G. Lamb, Pres.....Cerro Gordo
St. Clair Vance, Secy.....Bement

Pike County
J. R. Pollock, Pres.....Nebo
W. E. Shastid, Secy.-Treas.....Pittsfield

Pope County
J. A. Fisher, Pres.....Brownsfield
L. S. Barger, Secy.....Golconda

Pulaski County
L. F. Robinson, Pres.....Ullin
W. R. Wesenberg, Secy.....Mound City

Randolph County
A. E. Fritze, Pres.....Chester
John P. Grimes, Secy.-Treas.....Menard

Richland County
A. T. Telford, Pres.....Olney
E. H. Horner, Secy.....Olney

Rock Island County
H. A. Beam.....Moline
H. J. Love, Secy.....East Moline

St. Clair County
J. H. Fulgham, Pres.....East St. Louis
A. E. Hansing, Secy.....Belleville

Saline County
M. D. Empson, Pres.....Galatia
W. J. Blackard, Secy.....Harrisburg

Sangamon County
Elmer E. Hagler, Pres.....Springfield
Henry A. Aschauer, Secy.....Springfield

Schuyler County
A. W. Ball, Pres.....Rushville
J. S. Steiner, Secy.....Rushville

Scott County
J. W. Eckman, Pres.....Winchester
H. H. Fletcher, Secy.....Winchester

Shelby County
F. A. Martin, Pres.....Tower Hill
Frank P. Auld, Secy.....Shelbyville

Stark County
James R. Holgate, Pres.....Wyoming
Clyde Berfield, Secy.....Toulon

Stephenson County
N. C. Phillips, Pres.....Freeport
D. G. Smith, Secy.....Freeport

Tazewell County
H. L. Yoder.....Morton
F. C. Gale, Secy.....Pekin

Union County
S. G. Martin, Pres.....Anna
E. V. Hale, Secy.....Anna

Vermilion County
J. B. Morton, Pres.....Ridge Farm
Solomon Jones, Secy.....Danville

Wabash County
P. G. Manley, Pres.....Mt. Carmel
A. A. Aukenbrandt, Secy.....Mt. Carmel

Warren County
Philo B. Conant, Pres.....Roseville
H. M. Camp, Secy.....Monmouth

Washington County
R. Jack, Pres.....Okawville
H. Schmidt, Secy.....Addieville

Wayne County
T. J. Hilliard, Pres.....Fairfield
Osstella F. Blakely, Secy.....Fairfield

White County
C. B. Staley, Pres.....Enfield
John Niess, Secy.....Carmi

Whiteside County
W. H. Durkee, Pres.....Fulton
H. N. Schmaling, Secy.....Fulton

Will County
Marion K. Bowles, Pres.....Joliet
L. J. Lennon, Secy.....Joliet

Williamson County
J. G. Parmley, Pres.....Marion
H. A. Felts, Secy.....Marion

Winnebago County
Wm. E. Park, Pres.....Rockford
C. M. Ranseen, Secy.-Treas.....Rockford

Woodford County
W. D. Madison, Pres.....Roanoke
H. A. Millard, Secy.....Minonk

Dextrinized Grain Foods

Steam-Exploded

Grains are dextrinized by 400 degrees of heat. Puffed Wheat and Puffed Rice get 550 degrees for an hour.

Sealed in huge guns, this fearful heat creates steam in every food cell. When the guns are shot that steam explodes

So these are whole-grain foods with every food cell blasted. This makes digestion easy and complete.

The Puffed Grains are thin, flaky bubbles, eight times normal size. The heat gives an almond flavor. So the foods taste like confections.

The process was invented by Prof. A. P. Anderson, formerly of Columbia University. The result is considered the best-cooked grain foods in existence.

A test, we believe, will reveal a wide service for these hygienic dainties.

The Quaker Oats Company
Chicago (1750)

Puffed Wheat **Puffed Rice**
And Corn Puffs
All Steam-Exploded

Tested professionally—
Approved professionally.

Exceptionally Palatable, Digestible, Dependable.

Physicians have been able to prescribe to advantage

Hydroleine

in cases in which cod-liver oil is indicated. Hydroleine is pure Norwegian cod-liver oil emulsified in a manner which makes it extremely utilizable. It is without medicinal admixture. Sold by druggists.

THE CHARLES N. CRITTENTON CO.
115 Fulton Street, New York
Sample will be sent to physicians on request.

WANTED, FOR SALE, AND RENT DEPARTMENT

Advertisements under this heading cost one dollar for four lines or less, and 25 cents for each additional line, each insertion. Payable in advance. Line holds eight ordinary words.

DRUG AND LIQUOR HABITS CURED. No suffering or danger. New treatment without delirium. Absolutely satisfactory results. Modern Sanitarium, established eighteen years. Close personal attention. RALPH SANITARIUM, 529 Highland Ave., Kansas City, Mo.

FOR SALE—At one-half present prices, complete line of surgical instruments, embracing gynecological, urethral, nose and throat and general operating. All up-to-date and in good condition. Also microtome and excellent microscope. Address all inquiries to Mrs. Stephen C. Glidden, 422 N. Vermilion St., Danville, Ill.

EXPERIENCED graduate nurse desires case in a nice family. Graduate Nurses' Dormitory, 546 Garfield Ave., Chicago. Phones, Lincoln 2155, Diversey 2990.

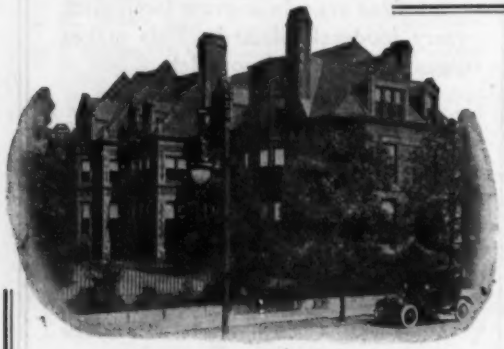
FOR SALE

Office Equipment for Eye, Ear, Nose and Throat Specialist

This equipment consists of modern office furniture and apparatus, complete sets of eye, ear, mastoid, nose and throat instruments of the newer types, all in perfect condition.

This is an exceptional opportunity for doctor starting in this specialty, or one who is changing his location.

If interested, write for further information and complete inventory of equipment to Mrs. B. S. Gailey, 340 W. State St., Jacksonville, Ill.



Resident Physician
JAMES H. APPLEMAN, M. D.

Drug and Alcoholic Addictions

Treated Exclusively

Modern institutional treatment administered under home-like conditions. Ethically conducted. Treatment based on latest scientific physical and laboratory findings. A fixed charge based on a complete examination is made to cover entire course of treatment, including examinations, nursing and medical attendance. Privacy assured. Descriptive and illustrated booklet covering both subjects sent free on request.

The Pine Sanitarium
Established 1900

1919 Prairie Ave., Chicago, Ill.
Local and Long Distance Telephone
Calumet 4543

Lobar Pneumonia

Successfully Treated with Type I Antipneumococcus Serum

(One-third of All Cases of Lobar Pneumonia are Type I Infection)

Without Serum Treatment	With Serum Treatment
10%	2%
of *all* cases die of Type I infection	of *all* cases die of Type I infection

THE work of Neufeld, Lister, Cole and others has shown that the pneumococci causing lobar pneumonia can be classified into several distinct groups: that 80 per cent of the cases are due to infection with Types I, II and III; and that ⅓ of the pneumonia cases are caused by Type I pneumococcus. It has been shown, experimentally and clinically, that immune serum against Type I infection is highly efficient; also that immune serums for the other Type infections do not produce such effective therapeutic results.

Major Nichols, in discussing the lobar pneumonia problem in the U. S. Army, says: "The death rate in Type I cases has been reduced from over 30 per cent to 5 per cent. This method of treatment has passed the experimental stage, and no patient with Type I infection who dies without the early intravenous administration of large doses of Type I serum can be said to have received the best treatment."

Lederle's ANTIPNEUMOCOCCUS SERUM—TYPE I is standardized by animal protection tests, according to the method outlined by Cole. It is marketed in special syringe packages containing 50 cc., thus facilitating the intravenous administration of the recommended doses of 100 to 200 cc. Every package bears the date of manufacture, thus insuring the physician against the use of serum of unknown age.

PRICE $5.00 PER PACKAGE OF 50 CC.

Literature on request.

For preventive inoculation, Pneumococcus Vaccine containing the principal types of pneumococci has been suggested by Major Nichols for use in the U. S. Army.

Lederle Antitoxin Laboratories

Schieffelin & Co., Distributors

New York

THE

RADIUM INSTITUTE

1604 Mallers Bldg., 59 E. Madison St.
Corner Wabash Ave., Tel. Randolph 5794

CHICAGO

DR. FRANK E. SIMPSON, Director

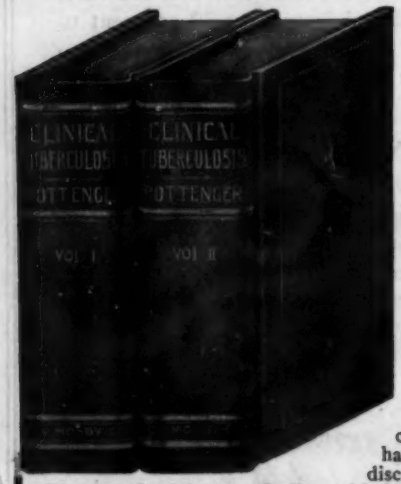
COUNCIL

DR. F. A. BESLEY — DR. E. C. DUDLEY
DR. A. R. EDWARDS — DR. O. T. FREER
DR. M. HERZOG — DR. L. E. SCHMIDT
DR. G. F. SUKER

TREATMENT of Malignant and Benign Growths with Radium; Postoperative Prophylactic Radiations following the Surgical Treatment of Cancer.

Radium is indicated in inoperable malignant conditions. By its use an inoperable case may become operable.

We desire to confer and co-operate with surgeons, assuring them adequate amounts of Radium to meet their requirements.



CLINICAL TUBERCULOSIS

PATHOLOGICAL ANATOMY, PATHOLOGICAL PHYSIOLOGY, DIAGNOSIS, PROGNOSIS, COMPLICATIONS AND TREATMENT

By FRANCIS M. POTTENGER, A. M., M. D., LL. D.

Medical Director, Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, California; Professor of Diseases of the Chest, College of Physicians and Surgeons, Medical Department, University of Southern California, Los Angeles, California.

In two volumes of 1,400 pages, with original engravings, including photographs, line drawings, charts, color plates, etc. Sold only in sets. Price, per volume, $6.00.

A Monumental Work on Tuberculosis

This is not only a book for specialists on tuberculosis, but is a practical treatise on diagnosis of the chest and in fact a study of the human being who happens to have tuberculosis. It contains a broad discussion of the principles of internal medicine. The first few chapters dealing with infections, their relation to childhood and childhood tuberculosis, particularly when one takes into consideration that all the methods f treatment are discussed from their physiological action, telling the physician what each will do and will not do, should make it worth while to all pediatricians.

The chapter on laboratory methods is an advance on all things written and should make it necessary that this be in the hands of all people who are trying to do accurate diagnostic work in tuberculosis.

It is not a book alone for specialists in tuberculosis, but should be in the hands of general men because of its being on general medicine. *Sign the attached coupon and mail today.*

C. V. MOSBY CO.—Medical Publishers—ST. LOUIS

Send for Complete Catalog of Medical Publications

Ill. Med. Jour.

C. V. MOSBY COMPANY
St. Louis.

CUT HERE

Gentlemen: Please send me one set (2 vols.) Pottenger's "Clinical Tuberculosis," for which I enclose my check for $12.00, or you may charge to my account.

Name .....
Street .....
Town..... State.....